



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**EFFECT OF ASSESSMENT PROCESSES ON MEASURING
HOMELAND SECURITY CAPABILITY**

by

John A. Donnelly Sr.

September 2007

Thesis Advisor:
Second Reader:

Robert Bach
Amy Donahue

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 2007	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE Effect of Assessment Process on Measuring Homeland Security Capability			5. FUNDING NUMBERS	
6. AUTHOR John A. Donnelly Sr.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) <p>The National Preparedness Goal directs that preparedness efforts for major events should be developed through a capability-based planning process. The ability to perform a valid and reliable capability assessment is necessary to guide proper allocation of resources in the capability-based planning process. Capability assessment is also necessary to validate and measure the impact of investments. This thesis examines a self-assessment methodology that may be used to perform capability assessment. The thesis employs a comparative case study methodology to examine process options that might be utilized to determine which process provides the most opportunity for data collection while fostering a collaborative environment that will provide opportunities for sharing knowledge among assessment group members. A review of the case studies suggest that the subject-matter experts employed in the analysis may not have the requisite knowledge to perform the assessment. This suggested finding implies problems with capability based planning efforts. The thesis makes recommendations for future strategies to perform homeland security capability assessments.</p>				
14. SUBJECT TERMS Capability Assessment, HSPD 8, Subject-matter Experts, Collaboration			15. NUMBER OF PAGES 87	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution unlimited

**EFFECT OF ASSESSMENT PROCESS ON MEASURING HOMELAND
SECURITY CAPABILITY**

John A. Donnelly Sr.
Captain, District of Columbia Fire and Emergency Medical Services
B.S., University of the District of Columbia, 2005

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
September 2007**

Author: John A. Donnelly Sr.

Approved by: Robert Bach, PhD
Thesis Advisor

Amy Donahue, PhD
Second Reader

Douglas Porch
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

The National Preparedness Goal directs that preparedness efforts for major events should be developed through a capability-based planning process. The ability to perform a valid and reliable capability assessment is necessary to guide proper allocation of resources in the capability-based planning process. Capability assessment is also necessary to validate and measure the impact of investments. This thesis examines a self-assessment methodology that may be used to perform capability assessment. A comparative case study methodology is employed to examine process options. These options might be utilized to determine which process provides the most opportunity for data collection while fostering a collaborative environment that may provide opportunities for sharing knowledge among assessment group members. A review of the case studies suggests that the subject-matter experts employed in the analysis may not have the requisite knowledge to perform the assessment. This suggested finding implies problems with capability-based planning efforts. The thesis makes recommendations for future strategies to perform homeland security capability assessments.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM STATEMENT	1
B.	RESEARCH QUESTION	3
C.	HYPOTHESIS.....	4
D.	SIGNIFICANCE OF THESIS	4
E.	LITERATURE REVIEW	5
II.	ARGUMENTS.....	11
III.	METHODOLOGY	15
A.	OVERVIEW	15
B.	ASSESSMENT PROCESSES.....	16
C.	ASSESSMENT GROUPS	17
1.	Assessment Group 1.....	17
2.	Assessment Group 2.....	18
3.	Assessment Group 3.....	19
4.	Assessment Group 4.....	20
D.	INTERVIEWS.....	20
E.	LIMITS OF THE EMPLOYED METHODOLOGY	21
IV.	ANALYSIS	23
A.	ANALYSIS INTRODUCTION	23
B.	CAPABILITY ASSESSMENT COMPARATIVE CASE STUDY	23
1.	Assessment Tool	25
2.	Precision.....	27
C.	RELIABILITY	28
D.	COLLABORATION AND CONVERGENCE	31
E.	VALIDITY.....	35
1.	Validity Assessment Group 2.....	36
2.	Validity of Assessment Group 1	37
3.	Validity Conclusions	40
F.	ASSESSMENT DATA BY DISCIPLINE.....	42
G.	CONCLUSION	47
V.	CONCLUSION	49
A.	INTRODUCTION.....	49
B.	FINDINGS.....	50
C.	RECOMMENDATIONS.....	53
1.	Leadership	55
2.	New Assessment Tactics	56
3.	Areas for Future Research.....	58
D.	CONCLUSION	59
	BIBLIOGRAPHY	61

APPENDIX A:	MEASURES – MASS SURGE CAPABILITY	67
APPENDIX B:	MEASURES – HAZARDOUS MATERIALS / WMD RESPONSE AND DECONTAMINATION CAPABILITY	69
INITIAL DISTRIBUTION LIST		71

LIST OF FIGURES

Figure 1.	Pilot Capability Self Assessment Tool Scoring Scale.	24
Figure 2.	Validity and Reliability Examples.	28
Figure 3.	Self Assessment Group Ratings, Hazardous Materials / WMD Response and Decontamination Capability.....	29
Figure 4.	Self Assessment Group Ratings, Mass Surge Capability.	30
Figure 5.	Assessment Group 2, Haz Mat / WMD Response and Decontamination, Measure 12, Individual Assessment versus Group Assessment.	32
Figure 6.	Assessment Group 2, Haz Mat / WMD Response and Decontamination, Measure 6, Individual Assessment versus Group Assessment.	33
Figure 7.	Assessment Group 2, Mass Surge, Measure 14, Individual Assessment versus Group Assessment.	34
Figure 8.	Assessment Group 1, Hazardous Materials / WMD Response and Decontamination, Measure 15, Individual Assessment versus Group Assessment.....	38
Figure 9.	Assessment Group 1, Mass Surge, Measure 3, Individual Assessment versus Group Assessment.	39
Figure 10.	Mass Surge Assessment Ratings by Disciplines/Group.	43
Figure 11.	Hazardous Materials/WMD Assessment rating by discipline	45

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

To meet the requirements of HSPD 8, DHS has proposed a self-assessment process to perform the national capability assessment. This document examines the results from a test deployment of the proposed system. The expected results of the deployment were the production of data that could be used to measure the effect of investments in homeland security to provide a snapshot of preparedness. DHS also expected this methodology to enhance the knowledge of participants in the assessment process.

The results of the comparative case study suggest a flaw with a basic assumption of the assessment process. The study suggests that the locally appointed subject-matter experts may not be able to employ the proposed methodology to produce valid and reliable data. The study did show an undercurrent of preparedness activities that were not captured by the assessment tool, but suggest collaborative homeland security planning efforts exist at the local level.

The findings are significant because they undermine the capability-based planning process. Capability-based planning develops investments based on gaps and needs identified in an assessment. Faulty assessments will reduce national preparedness by causing our decreasing resources to be invested to close gaps that may or may not exist.

This thesis recommends that DHS take steps that create an understanding of how capabilities are implemented at the local level, before efforts are made to assess those capabilities. The document also recommends that the National Response Plan, HSPD 5 and HSPD 8 be coordinated so that requirements and guidance regarding capabilities be made consistent.

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

This thesis is dedicated to the memory of my mother, Marsha Donnelly.

To my wife Germaine, thank you for the support, confidence and hard work, which allowed me to focus on this program and produce this thesis.

To my children Jack, Christina, and Patrick; thank you for allowing daddy to be away so much; I hope your sacrifice makes the world a safer place.

To my father Ray Donnelly, step mother Sue Carroll, brother Tom Donnelly, and sister Katie Donnelly: I could not have asked for a better team of editors, thank you.

To the District of Columbia Fire and EMS Department, thank you for encouraging my participation and empowering me to make a difference.

- Thank you to Fire Chief Dennis Rubin, retired Fire Chief Adrian Thompson, retired Assistant Chiefs James Martin and Douglas Smith, and Deputy Fire Chief Craig Baker.
- Assistant Chief Lawrence Schultz and retired Deputy Fire Chief Mike Sellitto, thank you for your invaluable guidance, confidence and encouragement at every turn.
- To the officers and members of the Special Operations Division, your dedication to be the best has been an inspiration to me throughout this process.

Metropolitan Police Department, District of Columbia, Chief Cathy Lanier, thank you for your confidence in recommending me to this program.

Chiefs Clarence Settle, Larry Settle, Nick Finamore, President Joseph Walzel and all the members of the Allentown Road Volunteer Fire Department are thanked for providing me with friendship, community values and an opportunity to serve my neighbors.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

A. PROBLEM STATEMENT

The *National Preparedness Goal (NPG)* as set forth in *Homeland Security Presidential Directive # 8 (HSPD 8)* is a plan to ensure that our country is prepared for a catastrophe and positioned to prevent a tragedy. Through the designation of capabilities-based planning and universal tasks, the goal sets a path to preparedness. To support the goal, federally funded grant programs provide resources and incentive to local implementation of the plan.

A solid foundation is required for any serious undertaking. In capabilities-based planning, the foundation is performance of both risk and capabilities assessments. This thesis focuses on one of these pillars: the capability assessment. If the capability assessment is not adequate, everything that follows is built on a broken foundation. In educational policy development the focus on foundations is understood. For example, the foundational skills of reading and writing are taught prior to critical analysis of poetry.

Why then, have we ignored the foundation of our capabilities-based planning cycle? The last national capabilities assessment was conducted in 2003, yet we have gone on to create and fund implementation of countless homeland security programs. These are commendable accomplishments, but — lacking an interwoven capability assessment — the accomplishments are built on a poor foundation. Without performing assessments as part of the investment process, it is unknown how far those investments have moved the nation toward meeting preparedness goals.

My experience with homeland security efforts in the National Capitol Region (NCR) demonstrates assessment to be a factor in the success or failure of efforts to implement the *NPG*. The inability to measure the effects of investments that are implemented as part of the *NPG*, hinders the ability to gain funding for programs that could bring safety and security.

The nation's previous attempts at assessment did not produce changes in behavior or create plans that caused improvements in homeland security. The 2003 National Capabilities Assessment was a paper lion, consuming personnel resources and providing little useful feedback.¹

The 2005 and 2006 Homeland Security Grant Application processes required the performance of a gaps analysis based on the *NPG*. In the NCR, the 2005 gaps analysis was completed with technical assistance from the Department of Homeland Security. This effort resulted in three consecutive days of proctored discussion about existing gaps. The focus group participants turned the discussion to defending existing grant funding requests. The result of this effort was a report in which identified gaps that aligned with funding requests. This effort did not provide data on existing gaps, nor did the assessment process produce an environment that encouraged open and frank discussion.²

This faulty foundation for the regional grant applications was a contributing factor in the low marks the submissions received for relating funding priorities to existing gaps in the *NPG*. The ultimate result was reduced funding and reduced ability to improve preparedness.

In 2006, these inefficient top-down processes resulted in the local development of a self assessment for capabilities that fell under the responsibility of Emergency Support Function #4, Firefighting. This effort was well-received within the discipline, and produced data and discussion that helped to create stronger homeland security capability assessment. By strengthening the foundation, the product improved.

Members of Emergency Support Function (ESF) 13, Public Safety and Security Annex, were exposed to the self-assessment in their supporting roles to ESF 4. This exposure caused them to adopt the self assessment and deploy it for target capabilities in which they were the lead agency. Both ESF 4 and ESF 13 felt this self-assessment

¹ GAO Report, 05-121, "Homeland Security, Management of First Responder Grant Programs Has Improved, but Challenges Remain," February 2005, 17

² This paragraph is a summary of observations made by the author after participation in the 2005 Homeland Security Grant Process. The author was participating in the assessment process as the leader of the Metropolitan Washington Council of Governments, Fire Chiefs Hazardous Materials Subcommittee.

process triggered an enhanced understanding of capability status. This understanding resulted from breaking the assessment processes into manageable modules and rapidly providing assessment results. Planners and decision makers used the results from the assessment to obtain an understanding of the whole capability — not just specific pieces.

This local assessment solution was unfinished, but it created an environment that sought to follow the preparedness cycle and focus on a foundational assessment process to inform investments. Members of multiple disciplines exposed to the survey credited the survey process with inspiring them to become more familiar with the elements of their capability. The results of the survey gave them an understanding of the status of their plans and programs in relation to meeting the requirements of the *NPG*. This capability survey effort was a step in the right direction. By providing a definition of current capability, our small homeland security community sought cross-discipline solutions to gaps — instead of chasing funding for single-discipline programs that already had high levels of implementation.

At the national level, the Target Capabilities Pilot Assessment Working Group has been at work developing the next National Capabilities Assessment with similar characteristics to the locally developed solution described above. This working group developed the Target Capability Self Assessment Tool and process described in this thesis.

B. RESEARCH QUESTION

A DHS working group has proposed a methodology using locally selected subject-matter experts to perform capability assessments. Can a portion of this assessment methodology, designed to create collaboration, be altered without affecting the assessment of capability status? What is the effect of the process changes on the desired additional benefits: enabling and improving collaboration among homeland security professionals?

In the proposed assessment methodology, collaborative opportunity is an expected byproduct of the assessment process. In this process, an assessment team reaches a

consensus opinion regarding a capability status. DHS expects that the consensus process will facilitate sharing of information and the creation of relationships among assessment team members. The benefits of this process are expected to include more accurate assessments and the creation of relationships that support future capability-building efforts. What is the effect of different processes on the expected collaborative benefits? Does changing the assessment process, from a consensus method to an aggregated method, affect the expected benefits of information-sharing and relationship-building?

C. HYPOTHESIS

The hypothesis for this research question is that altering the assessment process will not play a key role in the results, and that capability status assessments from the different processes will agree. A further hypothesis is that of the different processes, one process will be identified as having provided more additional benefits than the others. If the hypothesis is true, it will result in the ability to identify which process provides the greatest opportunity to determine capability status and provide additional benefits to the assessment team.

D. SIGNIFICANCE OF THESIS

Homeland Security is a nascent discipline, with dedicated guidance and funding initially occurring as a result of the Oklahoma City and Tokyo terrorist attacks.³ The terrorist attacks of 9/11 rapidly increased pressure on the discipline to increase national levels of preparedness. The maturing process of the discipline requires academic study of methods used to evaluate the components of the discipline. To date, there has been some research on measuring homeland security preparedness status, but this literature is not equal to the task of understanding the intricacies and nuances that occur in the performance of homeland security capability assessments.⁴ This thesis will expand on that body of knowledge by focusing on the processes needed to perform a capabilities

³ Andy Mitchell, "On Domestic Preparedness Efforts," Testimony before the Committee on the Judiciary, United States Senate, April 20, 1999, <http://judiciary.senate.gov/oldsite/42099am.htm> accessed August 16, 2007.

⁴ Glen Woodbury, "Measuring Prevention," *Homeland Security Affairs* I, no. 1 (Summer 2005), 10.

assessment in the homeland security environment. Specifically, the findings in this thesis will examine how members of the homeland security discipline are able to perform an examination of their field.

Homeland Security practitioners involved in planning activities will benefit from the development of a framework for understanding an assessment process proposed for use in homeland security. Ultimately, this understanding of the assessment process will help decision makers when allocating resources to improve capabilities.

The findings and recommendations included in this thesis will help national leaders understand capability assessment at the local level. Homeland security leadership can use the suggested findings presented in this thesis to develop capability assessment methodologies that meet both national and local priorities.

E. LITERATURE REVIEW

The terrorist attacks of 9/11 and the devastating effects of Hurricane Katrina caused the nation to focus energy and resources on how the nation plans for and responds to emergencies. The studies, results and ideas are incomplete, but the environment this examination has wrought is producing new ways of looking at how the basic functions of planning are performed in the emergency preparedness community. This thesis will focus on the methodology of measuring capabilities. This is also an area that has caused angst for emergency preparedness planners, as they attempt to quantify or classify capability.

The starting point for the literature review is the government documents that state the requirement or assess the results of the existing reviews. A capability review is required by HSPD 8, Section 24 Assessments and Evaluations.⁵ Additional requirements for the capability review are found in *State Homeland Security Program and Capability Review Guidebook, Volume 1*. This document defines minimum requirements of the state

⁵ George Bush, *Homeland Security Presidential Directive/HSPD-8* (Washington, DC: The White House, 2004), 5.

capability review and how the results are used in the grant process.⁶ The accuracy and results of the capability review are indicated by the importance placed on them in the grant allocation process. The Department of Homeland Security specifically suggests that grant applications be used to fund gaps in state capabilities as identified in the capability review.⁷ The Department of Homeland Security, Grants and Training Office directs that scoring of grant applications will be based on the ability to clearly state a plan to close weaknesses in state capabilities.⁸ Unfortunately, the guidelines to perform a capability review are not clearly specified in the capability review guidance.

The *NPG* is the roadmap proposed by the federal government to create a nation prepared to prevent, respond and recover from natural disasters and terrorist attacks. The *NPG* has three components: National Planning Scenarios, the Target Capabilities List and the Universal Task List. Within the *NPG*, capability-based planning is described as the preferred method to developing investments to reduce the risk from all types of hazards.⁹

The *NPG* provides a basis to assess preparedness to set priorities for the most effective use of limited resources.¹⁰ This basis is the Target Capability List (TCL). The TCL is a list of thirty-six capabilities that state and local governments are expected to create and maintain. Not every jurisdiction will be required to maintain each capability; the decision on which capabilities to implement should be decided based on the risk and circumstances present within an area of hazard.¹¹ To implement these broadly defined capabilities, coordination is needed between government, citizens and the private sector.

⁶ Department of Homeland Security, *State Homeland Security Program and Capability Review Guidebook, Volume 1* (Washington, DC: Department of Homeland Security, 2005), 4.

⁷ Matt Mayer, letter to Edward Reiskin, October 21, 2005.

⁸ Tracie Henke, "Application Review and Scoring Approach for Fiscal Year (FY) 2006 Homeland Security Grant Program." G&T Information Bulletin, no. 202 (February 2006): A-1.

⁹ Department of Homeland Security, *National Preparedness Goal* (Washington, DC: Department of Homeland Security, 2005), 4.

¹⁰ Department of Homeland Security, *Target Capabilities List, Version 2.0 (Draft)* (Washington, DC: Department of Homeland Security, 2005), 5.

¹¹ Department of Homeland Security, *National Preparedness Goal* (Washington, DC: Department of Homeland Security, 2005), 7.

Amy Donahue points out controversy in the effectiveness of the TCL as a measuring tool. She argues that the TCL is too large and that it assumes common behaviors across emergency response disciplines. As a result of this generality, capability requirements may vary across different target capabilities and obscure the need to focus on local coordination and shared capabilities.¹²

Current work by DHS is focused on formulating strategy to conduct capability assessments that are systemic, repeatable, useful and consistent in what they measure and the benefits the assessment produce. The assessment goals are twofold: to gather data on the nation's level of preparedness and to facilitate local understanding of preparedness. In Florida, a recent pilot assessment identifies issues that should be addressed in order for a capability assessment to help regions develop programs that are consistent with strategic plans and provide a database to measure the value of investments in those programs and plans over time.¹³ The report is implying that an assessment tool alone cannot create the opportunity to infer collaboration between disciplines, and the process for utilizing that tool is as important as the tool itself in the final use of the assessment data.

The ability to measure collaboration is of equal importance because accurate measures of these complex capabilities require multiple sources of information from all participants. The failure to include one agency in the assessment process could lead to an inaccurate assessment. In this manner, each capability requirement must work together with the others to equal a capability that is more than the sum of the separate parts. The extent to which these separate parts work together to achieve the greater output is collaboration. Understanding the collaboration effort is therefore important to understanding the impact of the measured capabilities on preparedness.

Any method used in the emergency preparedness community could usefully be compared to established capability or program assessment systems used elsewhere in government to assure wide acceptance. The Program Evaluation Profile tool, developed

¹² Amy Donahue, *Concerns about the Department of Homeland Security's Target Capabilities List Instrument and Process* (talking points paper presented to Interagency Board Chair, DRAFT, June 2006).

¹³ Department of Homeland Security, *Discussion on Changes to the Pilot Capabilities Self Assessment Tool* Pilot Capabilities Assessment: Methodology Meeting (Washington, DC: Department of Homeland Security, October 25, 2006), slides 10, 11.

by the Department of Labor, is a system for measuring safety programs in an effort to make the workplace safe. Because this tool seeks similar results to the emergency preparedness field, any similarities will provide an area of agreement within government. There are other standardized evaluation tools and methodologies in the Government Accounting Office and Office of Management and Budget (OMB). OMB uses the Program Assessment Rating Tool (PART) which also uses an assessment tool.

Theodore Poister and John Thomas, of Georgia State University, examine the possibility of using the methodology from James Surowieki's "Wisdom of Crowds" to assess citizen perception of the highway department. In their presentation "The 'Wisdom of Crowds': Learning from Administrators' Predictions of Citizen Perceptions," the authors examine two case studies. They conclude that the theory has merit in discovering unknown information and is suited to specific types of crowds. The concept of discovering unknown information has parallels to discovering whether collaboration is occurring within a target capability. The lessons from this process will be addressed in the thesis. The small size of this comparative case study is problematic, but it is of interest because the findings are similar to the predictions made by Surowieki.¹⁴

Recent literature examines measurements of homeland security capabilities. Glen Woodbury's article, "Measuring Preparedness", advocates an approach at the state government level to measure preparedness outputs. Woodbury's scale applies broad questions about prevention outcomes to determine critical gaps in knowledge about the effort being applied to close those gaps. He argues that this method can be used in the prevention field and to predict consequence. The assessment tool he uses is similar to the one proposed in this thesis, but the methodology of his assessment is different.¹⁵

The literature relating to collaboration in homeland security is more diverse. In their report on building collaborative capacity, Thomas, Hocevar and Jansen describe the benefits of collaboration as cost savings, improved decision making and maximizing the

¹⁴ Theodore Poister and John Thomas, "The 'Wisdom of Crowds': Learning from Administrators' Predictions of Citizen Perceptions" (presentation at the Public Management Research Conference, Los Angeles, CA, September 29, 2005), 21.

¹⁵ Glen Woodbury, "Measuring Prevention," *Homeland Security Affairs* I, no. 1 (Summer 2005): 10, <http://www.hsaj.org/?article=1.1.7> (accessed September 13, 2006).

efficiency of scarce resources. The authors argue that improving collaboration is especially important in instances when organizations must work together in support of a common goal.¹⁶ The benefits of collaboration that Thomas, Hocevar and Jansen have identified will need to be examined as effective measures of collaboration in the homeland security community. It may be possible that collaboration exists, but it does not produce the expected results, or that no collaboration exists and the identified outputs are met.

A Government Accountability Office (GAO) report examines collaborative efforts in the federal government. The report identifies areas that can be examined to assess collaboration. These areas are: definition of common outcome, joint strategies, leveraging resources, defined roles and policies, and accountability.¹⁷ The GAO issued a follow-up report that found the government's efforts at homeland security collaboration to be at a high risk for failure.¹⁸ The definition and impact of this failure will need to be examined. There may be instances where a lack of collaboration is acceptable to the parties involved, and the capability levels achieved by the parties are acceptable to their communities.

The primary gap in the literature is that DHS has yet to publish a capability assessment strategy. Initial efforts by DHS have produced pilot capability assessments, but how useful these pilots have been has not been fully examined. The purpose of this thesis is to explore how capability-assessment efforts may be improved by focusing on the process. Findings from the thesis will be used to make recommendations to inform capability assessment strategy development.

¹⁶ Gail Thomas, Susan Hocevar and Erik Jansen, *A Diagnostic Approach to Building Collaborative Capacity in an Interagency Context* (Monterey, CA: Naval Postgraduate School, 2006), 2.

¹⁷ United States Government Accountability Office, *Results-Oriented Government: Practices that Enhance and Sustain Collaboration Among Federal Agencies*, GAO-05-15 (Washington, DC: GAO, 2005), 1.

¹⁸ United States Government Accountability Office, *High Risk Series and Update*, GAO-05-207 (Washington, DC: GAO, 2005), 1.

THIS PAGE INTENTIONALLY LEFT BLANK

II. ARGUMENTS

The core claim of this thesis is that the process for performing capability assessments in homeland security must be studied to determine which methodology provides the most reasonable investment of resources, based on expected outcomes. The expected outcomes of the assessment are that it creates a snapshot of current capability status and causes additional benefits to be derived from the process of performing an assessment.

The value of capability assessments in homeland security results from their foundational role in capability-based planning. Understanding the limits of capability assessment benefits local officials who make investment decisions based upon the results of an assessment.

HSPD 8, the *NPG*, states that the nation can become prepared by developing appropriate threat-based capabilities.¹⁹ The *Goal* further defines capabilities-based planning as the chosen mechanism for guiding Homeland Security evolution. The first step in capability-based planning is assessing what capabilities exist, which capabilities do not, and how to measure changes over time.²⁰ Focusing on the first step in the process will improve the effect of planning efforts at all stages of the process and is, therefore, the focus of this thesis.²¹

To satisfy the capability-based planning demands, an assessment process should be trusted by those charged with using the results. Trust in the assessment will allow a confidence that investments made to correct gaps identified by the assessment are defensible and proper use of taxpayer funds. This thesis will examine assessment strategies and, using data gained from a series of pilot assessments, recommend a strategy for conducting assessments that satisfies the needs of the homeland security community.

¹⁹ George Bush, *Homeland Security Presidential Directive/HSPD-8* (Washington, DC: The White House, December 2004), 2.

²⁰ Paul Davis, *Analytic Architecture for Capability-based Planning, Mission System Analysis, and Transformation* (Santa Monica, CA: RAND, 2002), xii.

²¹ *Ibid.*, xii.

In its short history, DHS has failed to develop a relationship of trust with local officials. When talking about the collaborative and information-sharing processes at DHS, Representative Bennie Thompson states, “The department must start querying state and local organizations on their existing initiatives and develop better collaborative and coordinating tools.”²² The faults in this relationship are potential barriers to obtaining the necessary data from the assessment process. To ensure the assessment creates data that is systematic, repeatable, consistent and useful, it should be collected in a manner that recognizes a lack of trust by local government of DHS. To improve trust, an assessment process that creates collaboration by identifying local data needs are transparent, and shows the benefits of engaged participation, will allow the development of strategic planning processes to improve homeland security. One way this process will improve planning is to provide a database to measure improvement in preparedness over time. This process should also create an understanding of the interdependencies at local and regional levels required to achieve sufficient levels of preparedness.

This thesis examines how collaboration in the assessment process produces outcomes, or impacts that improve homeland security preparedness. The discovery of capability gaps that otherwise would not have been discovered as a result of collaboration in the assessment process is an example of the benefit of collaboration. If collaboration does produce beneficial outcomes, then the starting point for understanding these benefits is the assessment process.

One of the DHS goals in the assessment process is to create an understanding of preparedness activities at the local level. If collaboration produces benefits to preparedness, then collaboration should be included at initial stages of the planning efforts: the assessment process. Inclusion of collaborative effort at the earliest stages may create opportunities, through the assessment process, for future collaboration in support of an established national plan for preparedness.

²² Bennie Thompson, “Department of Homeland Security churns out poorly developed schemes,” *The Hill*. June 5, 2007, <http://thehill.com/leading-the-news/departments-of-homeland-security-churns-out-poorly-developed-schemes-2007-06-05.html> (accessed March 16, 2007).

An area of challenge is that DHS has created a problem by adopting capability-based planning as the strategy for securing the homeland. This argument is supported by the adoption of effects-based planning by the military and supported by the Office of Management and Budget. This challenge has a corollary argument: The planning efforts are too complex and the TCL is given too much weight in defining the outcomes of planning efforts. These challenges would argue that relying on state and local government to produce data — data that meets the stated goal of supporting strategic planning efforts and assessing preparedness — is impossible because of the variety of communities in our nation and the complexity of the TCL.

The following comparative case study in a large urban area focuses on these controversies. For instance, the research suggests the extent to which data gathered in an assessment process is systematic, repeatable, consistent, and useful to a complex strategic planning process. These analyses also lead to a discussion of strategies to improve homeland security preparedness by improving the assessment process. Capability-based planning efforts, for example, may have more value if they are incorporated into an effects-based planning process that focuses more directly on how specific capabilities — even if they vary across jurisdictions — produce desired outcomes.

THIS PAGE INTENTIONALLY LEFT BLANK

III. METHODOLOGY

A. OVERVIEW

The methodology employed in this thesis is a specific, localized test of the effect of altering a portion of the assessment process. The comparative case study is designed to examine whether and how an assessment process produces measures of capabilities and adds value to participants. The methodology employed in the study will include using a portion of the Self-Assessment Tool developed by a DHS Pilot Capability Working Group. This tool is designed to measure regional progress toward meeting the *NPG*.²³ Additionally, the working group expects that through the assessment process additional benefits for participants will be created. These benefits include opportunity for future collaboration in developing homeland security capabilities and an opportunity for participants to increase their knowledge of local capabilities.

The study will utilize focus groups composed of existing multi-agency, multi-jurisdictional committees from the National Capital Region. These groups will employ different processes to conduct a self-assessment of regional capability. The processes to be employed are designed to create different opportunities for convenience and collaboration as assessment group members work toward completion of the self-assessment tool.

Developing a methodology for understanding the effect of process, as it relates to opportunity for participation by subject-matter experts, is important to ensuring participation of subject-matter experts. Multiple demands on the schedules of the subject-matter experts limit opportunity for their participation in the self-assessment process.²⁴ Developing a process that allows for greater participation by homeland security professionals should cause more accurate and complete assessments to be

²³Lauren Fernandez, *Pilot Capabilities Assessment Orientation Brief*, Pilot Capabilities Assessment Working Group Meeting (DHS: Washington, DC, February 22, 2006), slide 8.

²⁴ Lauren Fernandez, "Pilot Version 2.0: Minnesota Update and Discussion," Pilot Capabilities Assessment Working Group Meeting (DH: Washington DC, June 27, 2006), slide 12.

conducted. Factors affecting opportunity to participate include the time needed to complete the assessment process and the convenience of scheduling the time commitment.

The data collected in the study will be analyzed to compare reliability of results across different processes. Structured interviews with assessment participants will examine opinions for the utility of the assessment data and discover collaborative benefits produced by the assessment processes.

B. ASSESSMENT PROCESSES

In the study, three different assessment processes were employed to complete a self assessment. Each of the assessment processes utilized the same measures to rate status of the Mass Surge and Hazardous Materials and Weapons of Mass Destruction Response and Decontamination capabilities. Each of these processes is designed to provide varied opportunities for collaboration.

Assessment Process 1 creates the most convenient opportunity for participation because the participant controls both the time and the location of the assessment. This assessment process creates the least opportunity for collaboration and discovering knowledge about the capability because the participants can choose to work alone to complete the assessment. In this process, assessment group members will be directed to complete the self assessment by a date two weeks in advance. The ratings of all participants will be aggregated into a final rating as to the status of the measured capability. The final output of Assessment Process 1 is a report on the capability status. This process will be employed in the assessment conducted by Assessment Group 1.

Assessment Process 2 creates a mixed opportunity for convenience and collaboration. Step one of the process is to perform Assessment Process 1. Step two of the process is added after aggregation. Group members will be presented the aggregated data and provided the opportunity to build consensus to a final rating. The choices for the assessment group will be to accept the rating as accurate, or change the rating to reflect the actual status. This process increases the opportunity to collaborate on the

results of the assessment by initiating discussion on capability status to reach a consensus rating. Members of Assessment Group 2 will utilize this process to perform their assessment.

Assessment Process 3 employs a process to complete the self assessment that limits opportunity for participation by requiring the assessment group member to dedicate a specific block of time at a specific location to complete the process. The benefit to this process is that the design increases collaborative opportunity for participants by causing them to work together to reach a consensus assessment rating for each measure. Assessment Group 3 and 4 will use this process.

C. ASSESSMENT GROUPS

Evaluating how process affects the outcomes requires that similar assessment groups and a similar assessment tools are employed in different assessment processes. This research will use existing regional, multidiscipline committees to conduct the self assessment utilizing different processes.

1. Assessment Group 1

The National Capitol Region, Mass Decontamination Working Group is comprised of representatives of fire departments, emergency medical services, police departments, health departments, hospitals, hazardous materials teams, emergency management, technology offices, and transportation offices from state and local governments. This mission of this group is to develop and implement policies and plans to improve Mass Decontamination capabilities within the National Capital Region.

Members of this group are decision makers from their respective agencies who have been tasked with developing innovative solutions to complex problems. It is the expectation of regional leaders that members appointed to this committee have intimate knowledge of Homeland Security issues in the National Capital Region. These members should also be able to understand how issues of one discipline or jurisdiction affect other

disciplines or jurisdictions. Many of the group members represent their agencies in the Homeland Security Grant Process and are leaders of other related committees and organizations.

Assessment Group 1 will be employed to examine a process that eliminates the need for members to work together when completing the assessment. Time commitment is a problem for senior level managers of any type of organization. Development of a method that reduces time impact by increasing flexibility may increase participation in the assessment process and improve the accuracy of results by encouraging the participation of the target audience.

To examine the reduced time processes, group members will complete the assessment tool individually. When completed, the assessment tool will be returned to a coordinator who will compile the results of the assessment. The result will be the average rating to each measure by the individual group members. In this process, the members work by themselves at a time and place of their choosing.

2. Assessment Group 2

The District of Columbia Strategic Planning Committee, Detection Research and Development Subcommittee is tasked with evaluating and integrating technologies for chemical, biological, radiation, nuclear and explosives detection with everyday polices as defined in the District of Columbia Strategic Plan. This committee must integrate needs of the district government with those of federal, state and private sector partners in order to provide layered detection capabilities within the National Capitol Region.

Members of this committee are subject-matter experts in detection technologies or response policies of their respective agencies. The members routinely collaborate with partners outside of their home agencies in furtherance of the goals and objectives of the committee.

Group two members will be employed in a process that studies the results of members completing the assessment on their own, then coming together to reach consensus on the results. In theory, this method will shorten the time needed to work

together while still allowing members collaborative opportunity by virtue of the consensus process. This method may reduce the time impact of the assessment process by increasing flexibility in when and how the survey is completed. This method is similar to the read ahead method used in meeting environments to assure that members are familiar with material to be covered and, as a result, reduce the amount of time spent in a meeting.

3. Assessment Group 3

The Metropolitan Washington Council of Governments, Fire Chief's Hazardous Materials Subcommittee mission is to coordinate the policies and procedures for hazardous materials response teams in the National Capitol Region. This committee has been in existence since 1982 and has developed and implemented regional policies for Radiation Response, Rapid Response and overseen regional training programs in Weapons of Mass Destruction Training for First Responders. Federal, state and local governments are represented on the committee as are Department of Defense assets, the private sector, our neighboring Urban Area Security Initiative region and many disciplines.

Group 3 will be used to examine the consensus method for completing the assessment. In this process, the members of the Hazardous Materials Subcommittee will convene with the purpose of completing the assessment tool. For each measure, the members will come to consensus on the status of the measure. This result will be recorded as the status of this capability.

Consensus is the method suggested by Pilot Capabilities Assessment Project Working Group as preferred to complete the assessment tool. Consensus is the preferred method because it is believed the process will foster collaborative relationships that may extend beyond completion of the assessment tool. The working group believes that the collaborative regional relationships are important to building improved capability with the NPG.²⁵

²⁵ Department of Homeland Security, *Pilot Capability Assessment Plan Working Document* (DHS: Washington, DC, March 3, 2006), 11

4. Assessment Group 4

This study was originally designed with three groups. During the assessment process with Assessment Group 1, a parallel assessment group was initiated by group members. Because the research question involves identifying both the benefits of collaborative assessment process and future collaborative opportunities arising from the assessment process, I decided to include this newly formed group as Assessment Group 4. The details of how this group was formed are discussed in Chapter IV, Analysis, Conclusion.

This group is composed of members of the Council of Governments Medical Surge Hospitals and Health Subcommittee. This group represents local public health officials, private sector representatives, emergency managers, and first responders. In the case study, this group employed the consensus method for completing the assessment. In this process, the members of the group convened with the purpose of completing the assessment tool. For each measure, the members came to consensus on the status of the measure. Their results were recorded as the status of this capability.

D. INTERVIEWS

The product of each group — a completed capability assessment performed with the Self Assessment Tool — provides the data used in this analysis. The first step in the analysis is to discover if the assessment tool can be used to facilitate data measurements that are reflective of the capabilities being measured. To reach this goal, results of the group products will be compared to each other in an attempt to discover similarities and differences. This comparison of data sets will be used to identify any effect of the different processes in performing the assessment.

Interviews with focus group members will be structured and include questions pertaining to how the process affected how the assessment data would be used and, outside of the process, if there are other factors that inhibit participation in the assessment process. A comparison of the results of the assessments and the results of the interviews will provide the data for this thesis.

From this analysis, questions for each of the participants were developed. The results of the interviews were used to confirm observations about collaboration and inform policy recommendations about which of the assessment processes holds the most promise for providing a reliable capability assessment and creating additional benefits.

E. LIMITS OF THE EMPLOYED METHODOLOGY

There are limits to how the results of these case studies should be compared and interpreted. The methodology is designed to examine the process used in the assessment. This study should have been performed using the multiple randomly-assigned assessment groups to perform the assessment utilizing a different process. This was not done. Instead, the assessment groups were composed of existing groups. The decision to perform the case studies in this manner was made because the DHS proposed methodology performs the assessment one time, by assessment groups with similar compositions to the study assessment groups.

The use of existing groups as assessment teams also serves to limit how data from this study can be interpreted. A more reliable method would be to utilize randomly selected subject-matter experts to perform the assessments. In reality, the small size of the subject-matter expert community, and the heavy time demands placed upon them because of their expertise, eliminated this option. This decision is also consistent with how the region has dealt with performing capabilities assessments in the past, assigning the assessment responsibility to an existing group.

The use of existing groups does not control for selection bias, and as a result some of the suggest findings may have alternative explanations. The alternative explanations may come from group composition and not the change in process. This limit will be especially important to consider when comparing group results.

These methodology compromises ultimately limit the size and scope of the study. As a result, the data produced by the case studies should be recognized for its weaknesses, and the analysis of the data collected during the study can only be recognized as suggestive or exploratory findings.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. ANALYSIS

A. ANALYSIS INTRODUCTION

This thesis examined a proposed methodology for performing the National Capabilities Assessment required by HSPD 8. Within the proposed methodology, a question of which process would be most appropriate to determine the status of capabilities became pertinent. The study within this thesis was developed to examine potential assessment processes to determine if a proposed approach had benefits over other possible approaches.

This analysis is limited to the small set of capabilities surveyed in the comparative case study. The study is performed within the guidelines of the proposed methodology. The study produced a data set that is suggestive of results that may be found in other Urban Area Security Initiative regions, but cannot claim to represent all of homeland security. The data set represents many of the homeland security disciplines, but does not provide multiple viewpoints from some of the support disciplines. Interviews with survey participants were used to clarify the existence of trends in the data and confirm observations about collaboration, validity and reliability.

B. CAPABILITY ASSESSMENT COMPARATIVE CASE STUDY

The Pilot Capability Assessment Process is designed to employ a group of subject-matter experts to assess the status of the various capabilities defined in the TCL. The assessment process is guided through the use a self-assessment tool. This tool employs a set of measures for each capability. Using the scoring scale in Figure 1, the measures are rated by the assessment group and collectively represent the status of the capability.

Figure 1. Pilot Capability Self Assessment Tool Scoring Scale.²⁶

Label	Explanation	Scale Value
No Progress	A score of 0 indicates that, while this aspect of [name the capability] is applicable to the region, no progress has been made towards achieving the identified objective. This may be because there has been no activity in this area, or because insurmountable barriers exist.	0
Limited Progress	Regions should score themselves at the lower to middle part of this range if preliminary efforts have been initiated. Needs related to this objective have been recognized, and the region is just beginning to identify requirements in this area. Few if any steps have been taken so far. Regions should score themselves at the middle to upper part of this range if the region has analyzed needs and understands requirements, and has taken specific steps toward achieving the objective. These steps may include initial plans to develop this aspect of [name the capability], allocation of resources, and identification personnel responsible for achievement of the objective.	1
		2
		3
Moderate Progress	Regions should score themselves at the lower to middle part of this range if significant efforts are under way but the objective has not yet been fulfilled. Important gaps remain and/or challenges that could potentially undermine achievement exist and have not yet been resolved. Regions should score themselves at the middle to upper part of this range if significant efforts are under way and specific examples of progress in this area can be identified. Strategies for closing gaps and overcoming barriers to success are being developed and initiated.	4
		5
		6
Substantial Progress	Regions should score themselves at the lower to middle part of this range if efforts to achieve this objective are established and stable. Some weaknesses or barriers that prevent success persist, but strategies to resolve them are documented and well under way. Regions should score themselves at the middle to upper part of this range if efforts in this area are mature. Few gaps or barriers to success remain. None are significant. Evidence documenting this level of progress is readily available. Evidence may include After Action Reports from exercises or events where this aspect of capability was demonstrated.	7
		8
		9
Objective Achieved	A score of 10 indicates that the region has fully achieved this objective with regard to [name the capability]. All barriers to success have been overcome. Strengths are robust and likely to be sustained. Evidence is readily available attesting to this level of achievement.	10
Not Applicable	The aspect of [name the capability] that this question describes is not applicable to the region.	N/A

²⁶ Self Assessment Tool Version 2.0, Pilot Assessment Working Group (DHS, FEMS, NPD: Washington, DC: January 29, 2007), Tear Out Sheet Tab.

The National Capital Region employs a homeland security strategy based upon the National Response Plan.²⁷ Under this strategy, the Target Capabilities in the *NPG* are assigned to Emergency Support Functions for implementation. The two Target Capabilities for assessment were selected to assure that data came from a cross-section of emergency support functions and from target capabilities with different emergency support function responsibility.

Health is the designated lead for Emergency Support Function # 8, Health, Mental Health and Medical Services. This group has been tasked to lead the implementation of the Mass Surge capabilities. The effort is supported by the emergency support functions for # 1, Transportation; # 4, Firefighting, # 5, Communications and Planning; # 13, Law Enforcement; and #15, Donations and Volunteer Management.

The Fire Department has been designated as the lead agency for Emergency Support Function # 10, Hazardous Materials. This group has been assigned the responsibility to implement the Hazardous Materials/WMD Response and Decontamination Target Capability. This effort is supported by # 1, Transportation; # 5, Communications and Planning; # 8, Health, Mental Health, and Medical Services; # 13, Law Enforcement; and #15, Donations and Volunteer Management.

The selection of these groups assures a similar support base across capabilities to be measured and will provide continuity in the assessment process. The members participating in the assessment are people who work together on many of the same issues being assessed as a regular course of their employment.

1. Assessment Tool

A Pilot Capability Assessment Working Group created the Self Assessment Tool to assess capabilities. This goal of this tool is to allow local preparedness officials to participate in a process of “capabilities assessment [that] produces valuable and relevant preparedness information [and] supports a regional preparedness approach to planning

²⁷ The National Capital Response Plan is formulated but not ratified, but working drafts are in place. Planning and Response functions are routinely using the draft form of the plan.

and investment efforts.”²⁸ This study was not designed to examine the tool directly, but will examine potential inconsistencies in the tool or measures suggested by the data.

The tool uses a series of measures that are designed to assess the progress of a region in implementation of the NPG. Selecting portions of the tool that provide the opportunity to measure the response of multiple disciplines across two dissimilar capabilities allows for an evaluation of the tool. For this survey, the Target Capabilities to be assessed are Mass Surge and Hazardous Materials/WMD Response and Decontamination.

The tool is designed for a small group of subject-matter experts to evaluate a set of cross-capability measures about collaboration and a set of specific measures about a defined capability. The assessment process is guided through the use a Self Assessment Tool. This tool employs a set of measures for each capability. Using the scale in Figure 1, the measures are rated by the assessment group and collectively represent the status of the capability.

The scoring scale is comprised of a subjective numeric scale tied to labels and explanations of progress that are used to represent progress toward meeting a specified measure. The number scale is anchored on either end by the number “0,” indicating no progress toward meeting the measure and the number “10,” indicating the measure is completely satisfied. The number scale is further divided by explanations that create sets of three numbers into three labeled categories of effort.

To develop the tool, the Pilot Capabilities Working Group refined characteristics of a good assessment tool for data collection using after-action reports on pilot assessment programs conducted in Florida and Colorado. They declared that survey measures should have the following characteristics:

- The measures should be a single-stage question, not a multipart question.
- The measures should provide enough detail and information so the measure has universal meaning to respondents.

²⁸ Seamus Mooney, “Pilot Capabilities Assessment Update & Methodology Discussion,” Pilot Capability Assessment Working Group (FEMA, NPD: Washington, DC, August 15, 2007), 4.

- Training and resources measures should be separate from plans and equipment.
- Equipment measures should address all aspects (procurement, training and maintenance) of the use of the equipment.²⁹

2. Precision

Because the label scale is grouped by threes, it can be inferred that the accepted level of precision through use of the tool is a range of three points. Therefore, any measures of progress by assessment groups that are within three points of each other constitute agreement on the rating given to a measure.

The data in this analysis was obtained from an experiment that employed three different processes to complete a self assessment. Each of the self assessments utilize the same measures to rate the status of the *Mass Surge and Hazardous Materials* and *Weapons of Mass Destruction Response and Decontamination* capabilities. The assessments were performed by local subject-matter experts; the same people who have performed in assessment roles in the past and have responsibilities for implementing programs in the capability areas being assessed.

The success of this comparative case study and the capability assessment assumes that the assembled subject-matter experts have the requisite knowledge needed to assess the measures, and that collaboration among these subject-matter experts will produce a valid and reliable convergence of ratings.

²⁹ Department of Homeland Security, *Pilot Capabilities Assessment Project*, Meeting Notes, October 25, 2006 (Department of Homeland Security, Office of Grants and Training): 2.

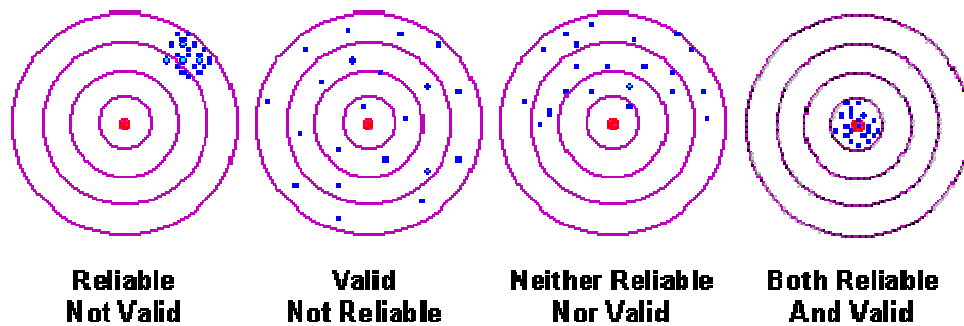


Figure 2. Validity and Reliability Examples.³⁰

Figure 2 represents the possible outcome scenarios from our assessment groups. The red dot in the center represents the undetermined status of the measure, and the blue dots represent assessments of the measure. In this assessment process, a reliable and valid outcome is multiple subject-matter experts providing similar ratings for a measure.

C. RELIABILITY

In the comparative case study, four separate groups of subject-matter experts completed the assessment utilizing the measures in the Self Assessment Tool to rate the progress toward implementation of the Hazardous Materials / WMD Response and Decontamination Capability. Reliable data indicating capability status from this survey would be indicated by measures with scores grouped around a range of three points on the scale; or grouped together as indicated in Figure 2, “Reliable and Valid.” The range of three points was earlier described as the precision of the Pilot Self Assessment Tool. If the range exceeded three points across a specific measure, we could infer that the results for this assessment process are unreliable. Because this thesis is examining the effect of process when using the tool, this finding would suggest further study of the process and the assessment groups.

³⁰ William M. K. Trochim, “Reliability & Validity,” Research Methods Knowledge Base” (Web Center for Social Research Methods), October 10, 2006, <http://www.socialresearchmethods.net/kb/relandval.php>, assessed July 17, 2007.

Figure 2 also shows an example; “Reliable, not Valid,” that can occur when the range of ratings is within a three-point range but does not adequately relate to the underlying capability status. Participants may agree, but in this example they may be agreeing on the basis of wrong information about the capability. An examination of any grouping warrants examination to determine validity.

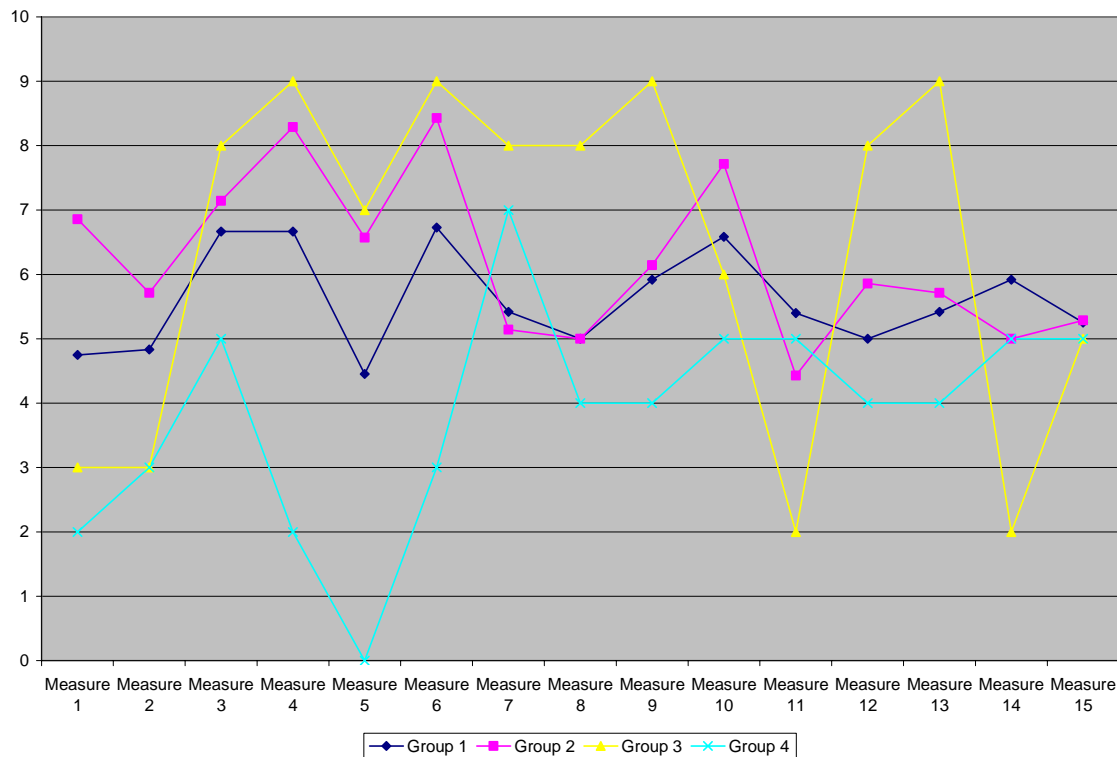


Figure 3. Self Assessment Group Ratings, Hazardous Materials / WMD Response and Decontamination Capability.

The chart in Figure 3 represents a comparison of the Self Assessment Group ratings for the fifteen measures in the Hazardous Materials / WMD Response and Decontamination capability assessment. This chart clearly shows that only measures 3, 7, 10 and 15 produce a grouping of results within the desired three-point range for reliability. The remaining assessment results exceed the three-point range. This observation suggests the need for further study of the effect of the assessment process on the validity of the results.

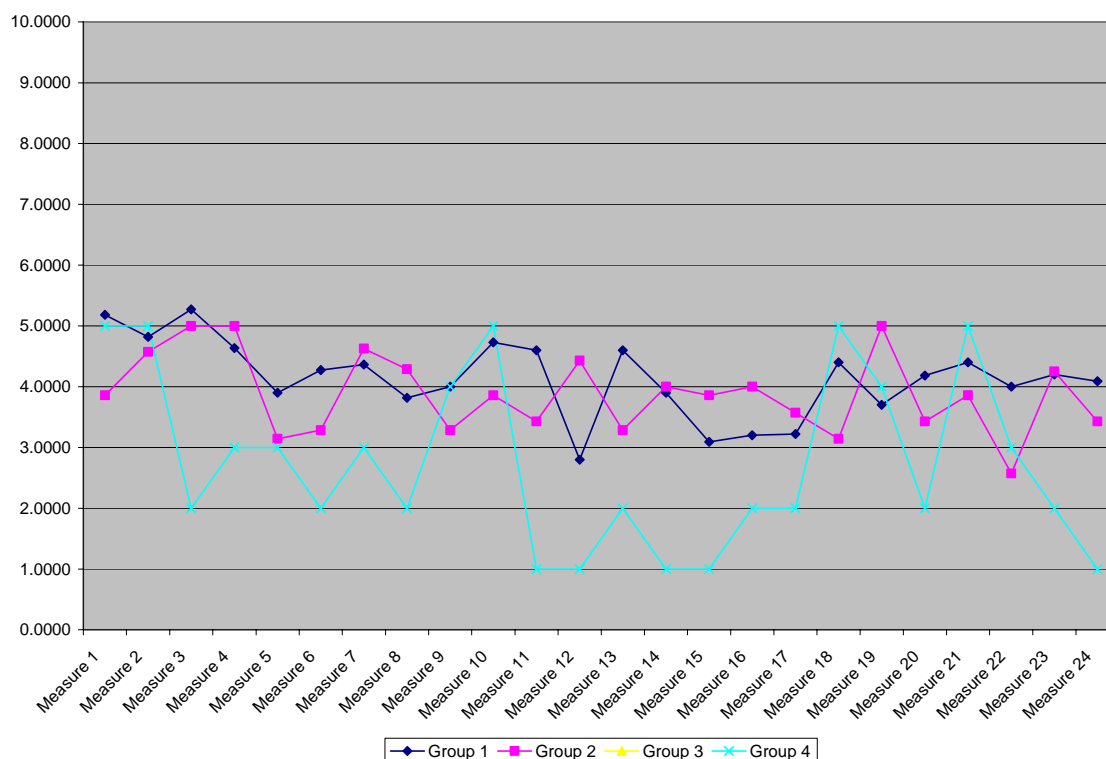


Figure 4. Self Assessment Group Ratings, Mass Surge Capability.

The chart in Figure 4 represents Self Assessment Group ratings for measures in the Mass Surge capability assessment. In this case, only measures 11 and 12 exceed the three-point range for accuracy. The finding from this comparison suggests that the different assessment processes produced reliable groupings of data. Further examination of this data will be completed to examine validity.

An examination of the reliability of the assessment processes, as measured by group outputs, suggests that there could be problems in the Hazardous Materials / WMD Response and Decontamination assessment and, to a lesser degree, in the Mass Surge assessment. A finding that the assessment process failed to produce reliable results suggests the need for further examination of the methodology. If true, unreliability is an important finding about the capability assessment process.

The findings in this section of the analysis explore problems with data reliability. These findings also suggest a need to examine the validity of the data collected. The

examination of validity will be prefaced by a discussion on collaboration, because the extent and methods of collaboration provides evidence on the validity of the assessment results.

D. COLLABORATION AND CONVERGENCE

In addition to providing data about capability status, the expected outcomes of the assessment process are that it will both educate and encourage collaboration.³¹ This study provided an opportunity to explore the educational and collaborative aspects of the assessment process by examining the data and interviewing participants to understand how members came to agree on ratings for measures. The expected result from the study is that members of the assessment groups would come to the process with a certain level of understanding of the capability status. Also, as a result of collaboration with other group members, they would gain additional knowledge about the capability status, thus converging on the actual capability status.

An observation of Assessment Group 2 allows an understanding of how individual assessment group members came to a consensus for group ratings. These observations show how the assessment process produced a final rating. This final rating should represent a convergence of the individual group member's knowledge about the capability status. If a convergence in the ratings does not occur, problems related to groupthink and assessment design need to be considered.

Observations of Assessment Group 2 were used to examine the collaborative effort employed to meet the goal of performing a multi-disciplined assessment. Interviews with individual group members were used to determine if convergence occurred in reaching the final rating, or if agreement was influenced by other behaviors.

³¹ Department of Homeland Security, "*Pilot Capability Assessment Plan Working Document*" (DHS: Washington, DC, March 3, 2006), 2.

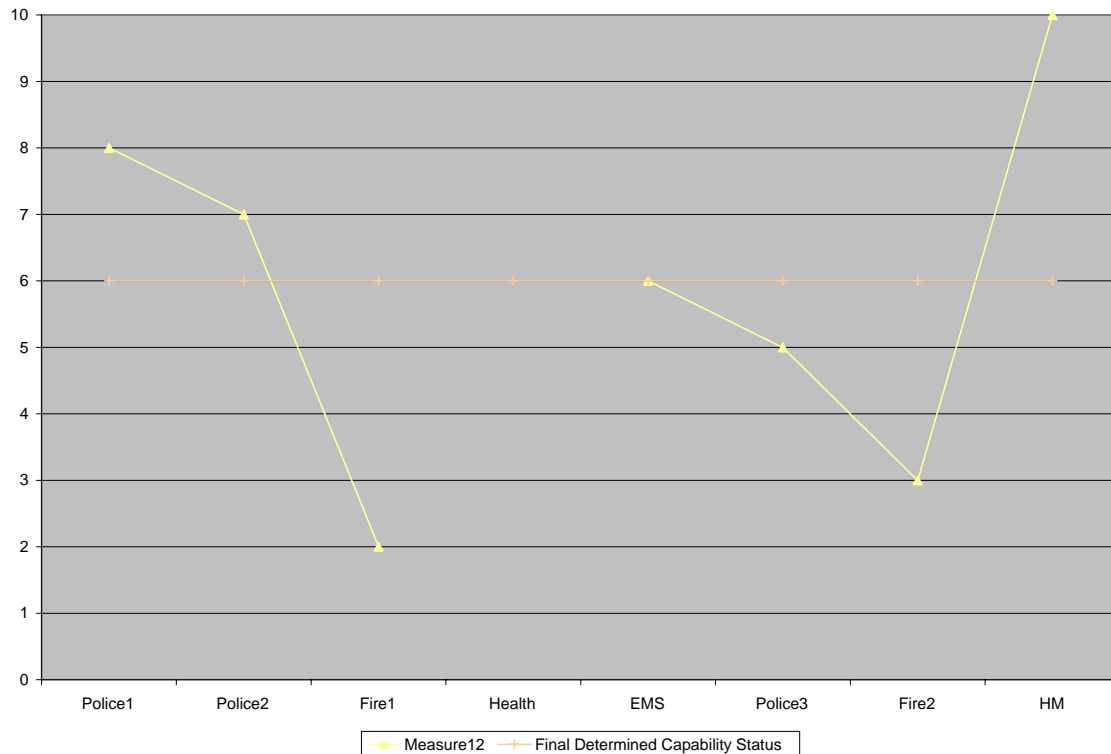


Figure 5. Assessment Group 2, Haz Mat / WMD Response and Decontamination, Measure 12, Individual Assessment versus Group Assessment.

Figure 5 demonstrates a comparison of the level of progress ratings from the members of Assessment Group 2 for Measure 12;

Our region is able to ensure the safety and security at the scene and support facilities it intends to use for WMD/Hazardous Materials Response and Decontamination. (That is, can your region determine and ensure the structural integrity, capability, and physical security of its HazMat Management facilities?)³²

The chart demonstrates diversity of individual opinion about the status of Measure 12. The ratings range of eight points exceeds the three-point precision of the tool and would cause the assessment result to be considered unreliable if those views remained as the final opinion of the assessment group. The chart also demonstrates a

³² *Self Assessment Tool Version 2.0*, Pilot Assessment Working Group (DHS, FEMS, NPD: Washington, DC: Hazardous Materials / WMD Response and Decontamination Tab, January 29, 2007.

comparison between individual determination of level of progress and final group determination of level of progress for the measure. Finally, the chart also shows where a member of the health discipline did not provide a rating for the measure because of uncertainty as to the level of progress.³³

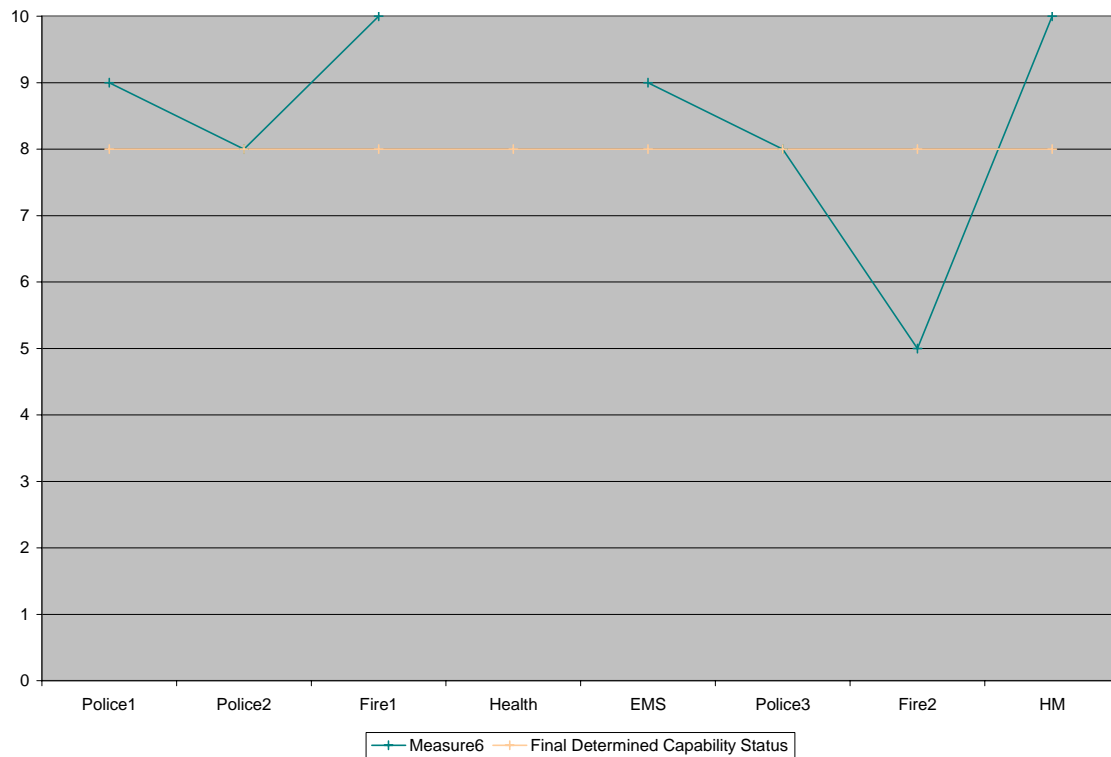


Figure 6. Assessment Group 2, Haz Mat / WMD Response and Decontamination, Measure 6, Individual Assessment versus Group Assessment.

Figure 6 demonstrates a comparison of level of progress ratings from members of Assessment Group 2 for Measure 6:

³³ Instructions to assessment team members completing the survey were to complete it to the best of their ability, follow up questions from members resulted in assessment team members being directed to not rank measures they did not “know the answer to.”

Our region's plans for WMD/Hazardous Materials Response and Decontamination address substance identification equipment (e.g., bases, vapors, liquids, solids, biologicals like white powder).³⁴

The chart demonstrates diversity of individual opinion about the status of Measure 6. The ratings range of five points exceeds the three-point precision of the tool and would cause the assessment result to be considered unreliable if those views remained as the final opinion of the assessment group. The chart also demonstrates a comparison between individual determination of level of progress and final group determination of level of progress for the measure. Finally, the chart also shows where a member of the health disciplines did not provide a rating for the measure because of uncertainty as to the level of progress.

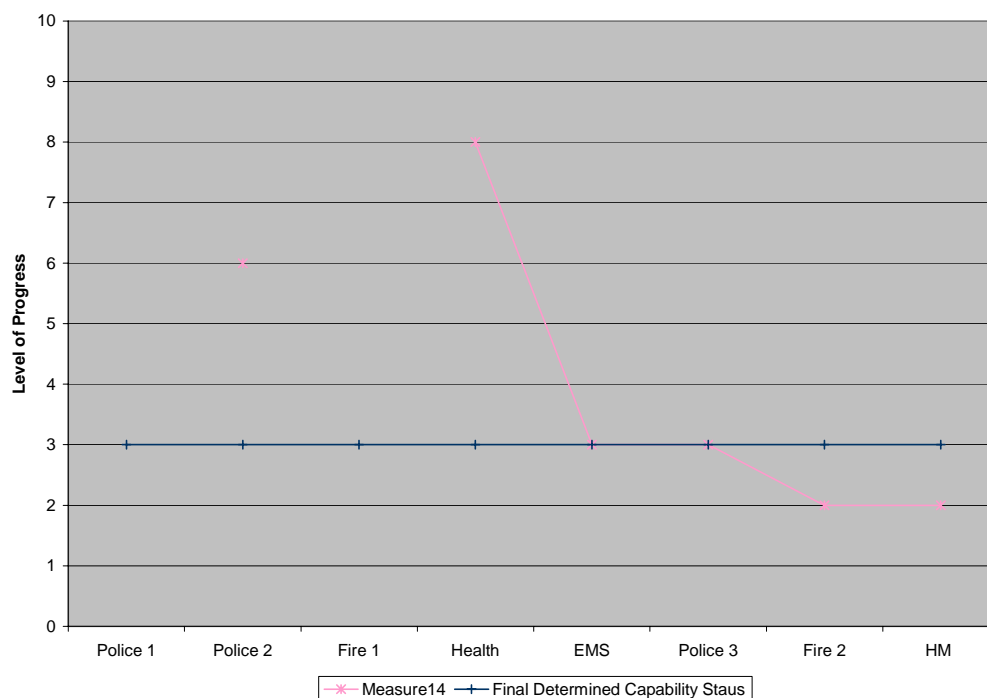


Figure 7. Assessment Group 2, Mass Surge, Measure 14, Individual Assessment versus Group Assessment.

³⁴ *Self Assessment Tool Version 2.0*, Pilot Assessment Working Group (DHS, FEMS, NPD): Washington, DC: Hazardous Materials / WMD Response and Decontamination Tab, January 29, 2007.

Figure 7 demonstrates a comparison of the level of progress ratings from the members of Assessment Group 2 for Measure 14:

Our region maintains databases that track the status of resources (e.g., medications, medical professionals) available to support Medical Surge.³⁵

The chart demonstrates diversity of individual opinion about status of Measure 14. The ratings range of six points exceeds the three-point precision of the tool and would cause the assessment rating to be considered unreliable if those views remained as the final opinion of the assessment Group. The chart also demonstrates a comparison between individual determination of level of progress and final group determination of level of progress for the measure. Finally, the chart also shows where members of the police and fire disciplines did not rate the measure because of uncertainty about the level of progress.

E. VALIDITY

The foundation of this assessment methodology rests on the ability of subject-matter experts to reach an accurate conclusion on the status of a capability. In the proposed methodology, the subject-matter experts are selected by state and local governments. Within local and state government, the functional area being measured is a niche; at this time much of the detailed knowledge of homeland security activities is with a small cadre of personnel. Because the community is small, care must be taken to ensure that assessment groups are representative of a cross-section of this community in order to ensure diversity of opinion. Ultimately, in this study, validity is measured by agreement of the groups and members as measured in assessment ratings.

The charts presented represent the wide range of opinions on the level of progress being made towards the capabilities held by individual members of the assessment group, including examples where members felt they did not know the level of progress for a measure. If the average rating reflects the member's "informed" opinion about the status

³⁵ *Self Assessment Tool Version 2.0*, Pilot Assessment Working Group (DHS, FEMS, NPD: Washington, DC: Mass Surge Tab, January 29, 2007.

of the capability, then it is necessary to understand how the assessment groups reached consensus on the rating for a measure. This point is critical to understanding the validity of each measure and, through each measure, the entire process. The design of the tool expects consensus to create validity as assessment group members employ their expertise to validate the assessment results.

1. Validity Assessment Group 2

When Assessment Group 2 met to reach consensus on the assigned rating for each measure, group members accepted the aggregated result each time. In the consensus process, there were discussions about the level of progress, and pointed questions asked between disciplines. These discussions, however failed to move the group from the aggregated rating. The questions asked between members of the group were focused on learning about the status of the capability, as opposed to efforts to have other members change their opinion about a capability status.

For example, members of the police discipline inquired with the health discipline about integration of security expectations in the measures. These discussions exhibited the characteristics of free flow of information and discovery that are the elements of collaborative effort.³⁶

Interviews were utilized to examine the occurrence of convergence in the assessment ratings, specifically to examine why members agreed to accept ratings that differed greatly from their own. Interviews with group members found that members routinely accepted the average rating because they were uncertain of their original rating. Evidence of the lack of confidence in the original rating or the final rating is demonstrated in the interview process. Reasons given for accepting the aggregation included:

³⁶ Hocevar, Susan, Gail Thomas and Erik Jansen, "Building Collaborative Capacity: An Innovative Strategy for Homeland Security Preparedness," *Innovation Through Collaboration, Advances in Interdisciplinary Studies of Work Teams 12* (Elsevier Ltd: 2005), 264.

- Looking at the scores now, I went too high.³⁷
- I gave an honest answer, not sure everyone else gave honest answer.³⁸
- I am an optimist, but the group might be producing a more accurate rating.³⁹

It is a significant finding that group members accepted the mean ratings without a single change every time. They accepted the changes despite evidence of a wide range of opinions as to what the correct rating could have been. This finding is not an example of convergence in the sense that convergence equals knowledge gained. It is a finding that members changed their assessments because they lacked confidence in their knowledge. This finding is true for both capabilities assessed. This finding suggests exploring the assumption that subject-matter experts have the expertise to conduct reliable and valid capability assessments.

2. Validity of Assessment Group 1

To support the suggestion of validity problems from the analysis of data from Assessment Group 2, an examination of the data collected from Assessment Group 1 was conducted. This data is important because it also suggests that the selected subject-matter experts lack the knowledge to assess capabilities against the proposed measures.

Figure 8 demonstrates individual ratings from Assessment Group 1 for Hazardous Materials / WMD Response and Decontamination, Measure 15, “To what extent has your region exercised its ability to implement WMD/Hazardous Materials Response and Decontamination procedures (e.g., exercised response to pre-identified hazards, decontaminated victims).”⁴⁰ The chart demonstrates diversity of individual opinion about the status of Measure 15. The eight-point ratings range exceeds the three-point precision of the tool. The chart also demonstrates a comparison between individual

³⁷ Interview of Participant 5 by author, Washington, DC, June 6, 2007.

³⁸ Interview of Participant 6 by author, Washington, DC, June 5, 2007.

³⁹ Interview of Participant 7 by author, Washington, DC, June 5, 2007.

⁴⁰ *Self Assessment Tool Version 2.0*, Pilot Assessment Working Group (DHS, FEMS, NPD: Washington, DC: Hazardous Materials / WMD Response and Decontamination Tab, January 29, 2007.

determination of level of progress and final group determination of level of progress. Finally, the chart also shows where a member of the fire discipline did not rate the measure because of uncertainty as to the level of progress.

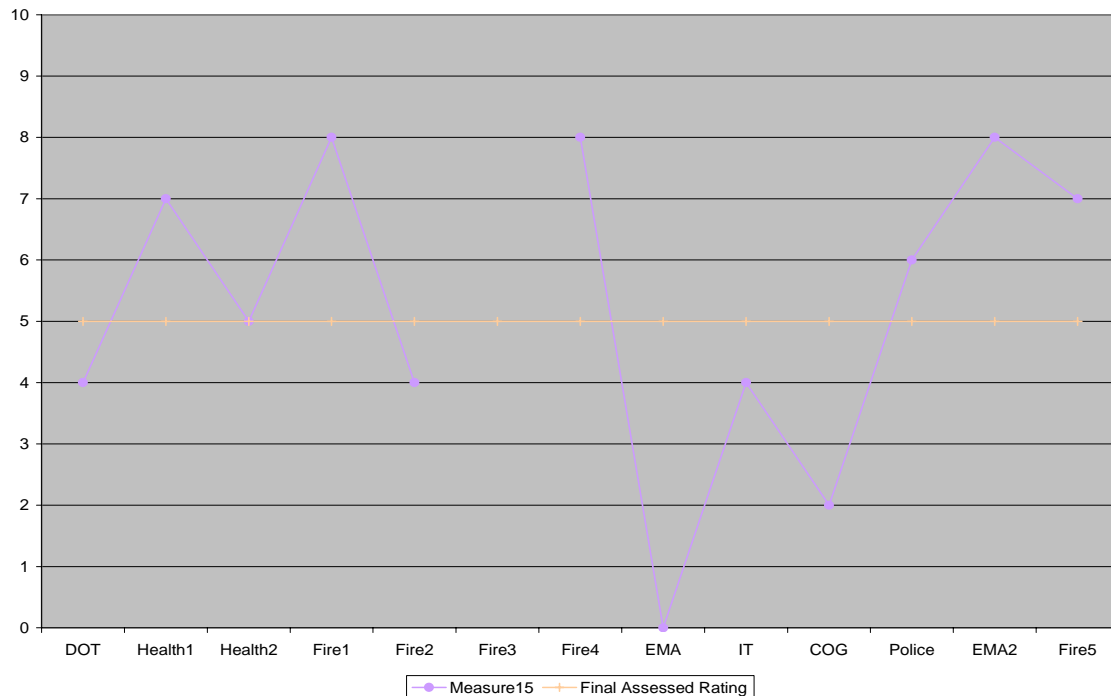


Figure 8. Assessment Group 1, Hazardous Materials / WMD Response and Decontamination, Measure 15, Individual Assessment versus Group Assessment.

Figure 9 demonstrates individual ratings from Assessment Group 1 for Mass Surge, Measure 3:

Our region's plans address the use of existing facilities in support of Medical Surge (e.g., hospitals, clinics, extended care facilities).⁴¹

The chart demonstrates diversity of individual opinion as to level of progress towards Measure 3. The seven-point rating range exceeds the three-point precision of the tool. The chart also demonstrates a comparison between individual determination of

⁴¹ *Self Assessment Tool Version 2.0*, Pilot Assessment Working Group, (DHS, FEMS, NPD: Washington, DC: Mass Surge Tab January 29, 2007.

level of progress and final group determination of level of progress. Finally, the chart also shows where two members of the emergency management discipline did not rate the measure because of uncertainty as to the level of progress.

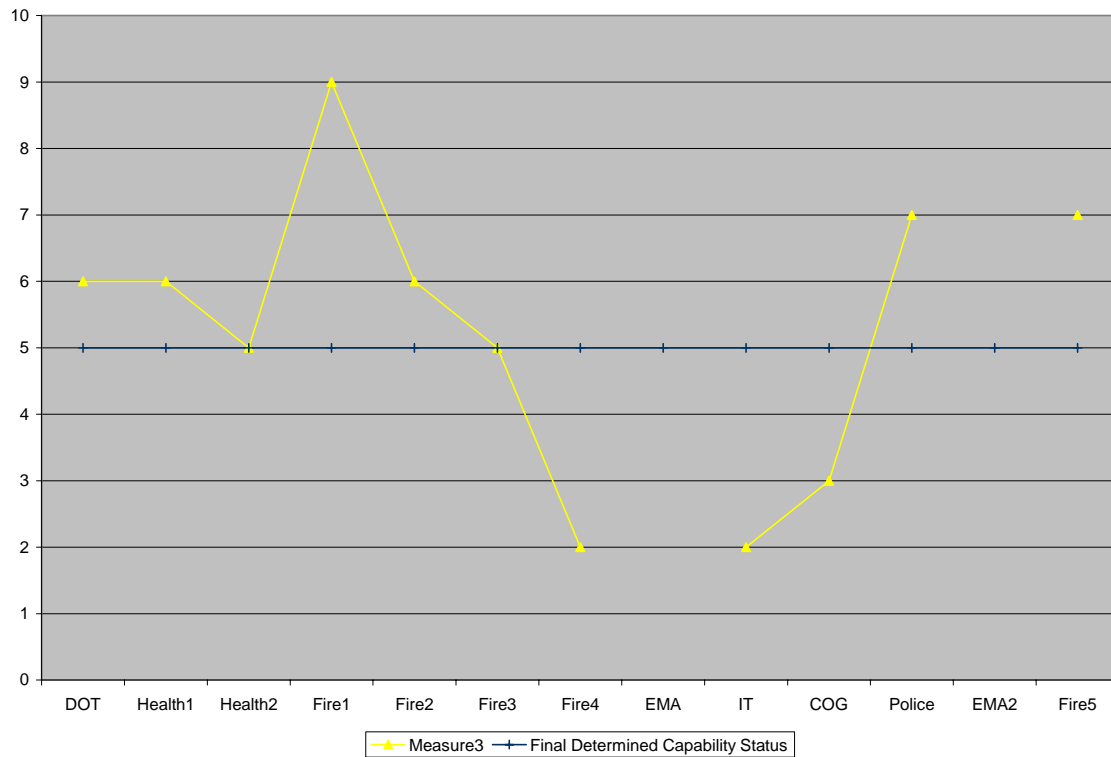


Figure 9. Assessment Group 1, Mass Surge, Measure 3, Individual Assessment versus Group Assessment.

At the conclusion of the comparative case study, members of Assessment Group 1 were individually presented with the aggregated results and queried about the final ratings, the relationship of the final rating to their rating and if they would feel comfortable using the results of the assessment in planning for future efforts.

Assessment Group 1 members reacted in a similar manner to Assessment Group 2 members in accepting the final aggregated ratings as more accurate than their own opinion on the status of the capability. Many of the members felt they might use this data in future planning efforts. This finding is troublesome, because it presents a dilemma of

inaccurate information about the status of a capability being interjected into the preparedness cycle and capability-based planning efforts required by HSPD 8.

The data suggests that disagreement in the assessment group members' confidence in their individual knowledge was exhibited on multiple occasions. One of the police officials who completed the survey felt that she would use the data to determine funding or project priorities between the assessed capabilities. She did say that she was unsure about other uses of the assessment results.⁴² A member of the emergency management discipline, who did not provide ratings for the Mass Surge Capability, felt that the results would need further study to determine if they held value. This member went on to say that the assessment results were accurate for Mass Surge, based on his limited knowledge, and he was confident in the assessment results for Hazardous Materials / WMD Response and Decontamination.

3. Validity Conclusions

The validity of this assessment methodology is based on the subject-matter experts' ability to reach an accurate conclusion about the status of a capability. As described earlier, the community of experts is a small group with wide-ranging responsibilities and needs. In this small, diverse group, it is important the assessment process represent all members. Representing all members will ensure the diversity of opinion necessary to thoroughly examine and accurately assess the status of a capability.

There is a limiting factor in this discussion about validity, in that the context of this thesis validity can only refer to the agreement among the assessment teams. Because of the aforementioned limits of the study methodology, the findings presented in this section are not definitive, but explore a potential problem in the proposed assessment process.

The four groups employed in this study utilizing the Self Assessment Tool are representative of the homeland security community. Members in this study represent fourteen different disciplines, federal, state, local government and the private sector.

⁴² Interview Participant 3 by author, Washington DC, June 5, 2007.

More importantly, the assessment group members are leaders of projects or committees implementing the capabilities being measured. These members and the groups they represent are the right people to perform a macro level capability assessment of this specialized knowledge area because they have the requisite specialized knowledge.

Assessment Group 1 was composed of members of an existing committee that is working to implement regional mass decontamination standards. Assessment Group 2 was composed of an existing committee that meets to discuss detection technology and implementation programs, plans and purchases in compliance with the goals of the District of Columbia Response Plan. Assessment Group 3 was composed of members of a regional hazardous materials response committee. Assessment Group 4 was composed of a regional hospital-centered health care committee.

These committees and groups are responsible for updating response plans, submitting grant applications and implementing plans to raise their community's level of preparedness. These people are the experts in their fields. The finding — that these people lacked confidence in the measures — points to a number of potential problems. The problems could be their knowledge, the measures, or the methodology. What is suggested by this study is that the capability assessment methodology and the subject-matter experts are misaligned. The result of this misalignment is the performance of an inaccurate capability assessment.

An earlier suggestion — that the Mass Surge assessment process provided reliable results — may be questioned by an occurrence during the Mass Surge capability assessment. An examination of Figure 8 shows that data from Assessment Group 3 is not included. This data is not included because Assessment Group 3 declined to complete the Mass Surge capability assessment. Members of Group 3 asserted they did not have the requisite knowledge to accurately complete the assessment. They felt it would be better to abstain from the process than to provide inaccurate results.⁴³ This suggests a significant problem related to validity. The suggestion is that subject-matter experts were not subject-matter experts for the purposes of the capability assessment process.

⁴³ Minutes of the Metropolitan Washington Council of Governments, Fire Chief's Hazardous Materials Subcommittee Meeting, compiled by Sean Brooks, April 13, 2007.

Non-response to a question or category of questions was an unexpected occurrence in this study. The findings here suggest a pattern that questions the basis for the capability assessment methodology. Subject-matter experts with oversight and planning responsibilities responded to the survey or the assessment process by apologizing for not having the “correct” answers or explaining that they did not have the requisite knowledge of regional efforts to rate regional progress toward the goal.⁴⁴ One fire chief apologized for not collaborating to obtain more accurate information to complete the survey; he also felt that he should know more about the answers to the Mass Surge capability.⁴⁵ This admitted lack of knowledge is consistent with the wide range of individual ratings given to measures.

Analysis of the data collected from the assessment process suggests further exploration of validity. The suggested findings related to validity are centered on the assumption of the expertise of the subject-matter experts selected to perform the assessments. The problem was that some members admitted to lacking the knowledge they were expected to have to complete the survey.

These suggested findings create a problem with data collected. In the assessment process, the status of the capability is unknown; if the assessment ratings are determined to be invalid, then there is no way to determine the status of the capability. The next section, on collaboration and convergence, will be used to examine knowledge levels of the subject-matter experts as it relates to this process.

F. ASSESSMENT DATA BY DISCIPLINE

When presented with the results of the survey, members of one discipline inevitably wanted to know how the other disciplines rated a measure in comparison to the rating of their discipline. This comparative case study provided some data in that area and suggests some trends that should be considered in future methodology development.

⁴⁴ Participant 1 email to author April 3, 2007, Participant 2 email to author, March 27, 2007, and Interview of Participant 3 by author, June 5, 2007.

⁴⁵ Participant 4 email to author, March 30, 2007.

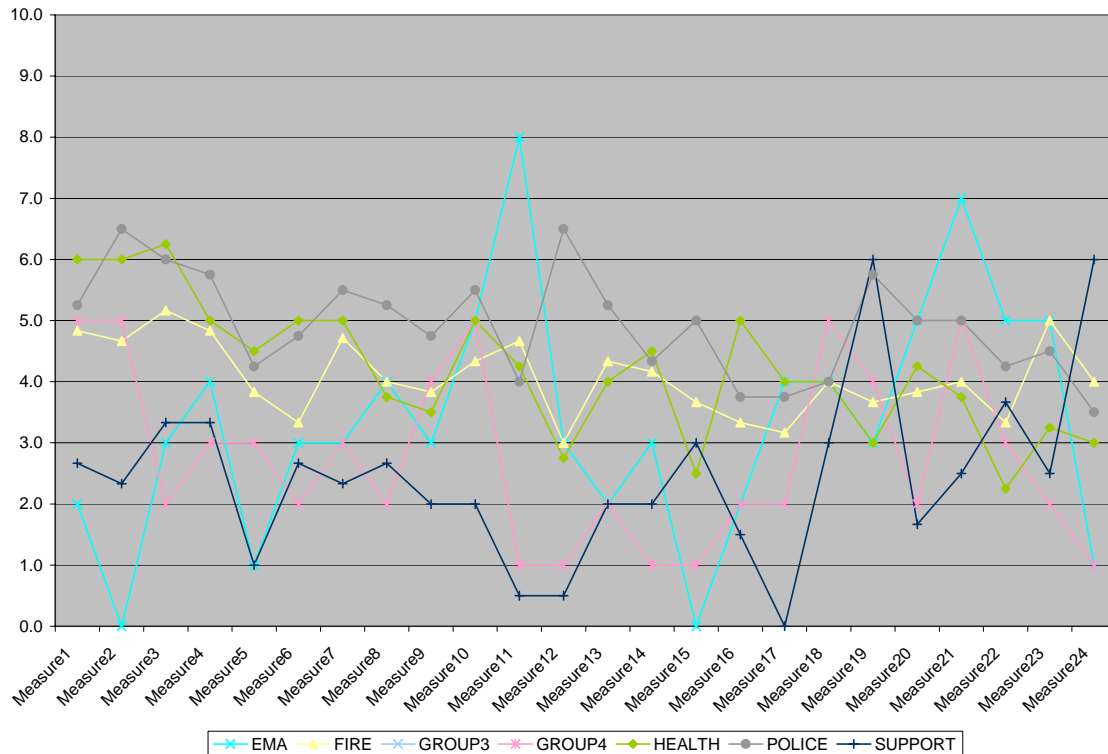


Figure 10. Mass Surge Assessment Ratings by Disciplines/Group.

In the Mass Surge Capability, the health discipline is designated the lead Emergency Support Function for the development and implementation of plans and programs to ensure that adequate Mass Surge capability is available. In Figure 11, the chart presents the assessment given to each measure according to discipline. This chart shows that members of the health discipline tended to provide higher ratings for this capability than all of the other disciplines except police. The trending shows the police and health discipline generally agreed on the ratings for performance measures.

Figure 10 also demonstrates an interesting finding about group versus individual ratings. The health discipline's aggregated scores are, on average, far above Assessment Group 3's average. This is significant because it demonstrates the possible differences between an aggregated scoring and a consensus scoring methodology. Given the

conflicted data presented in this thesis, it is impossible to determine which methodology provided a more accurate assessment of capabilities.

The emergency management discipline is a bellwether in this survey. This discipline has overall coordination and planning responsibilities that cross all disciplines and capabilities. An argument can be made that if the higher assessment ratings assigned by the health discipline were accurate the emergency management discipline would also have provided a rating above average, instead of the consistently lower rating given.

The data set used here is inconclusive but suggests that coordination portions of the Mass Surge capability plan are incomplete. Three members of the emergency management discipline participated in the individual portions of the survey. Two members declined to complete the Mass Surge Self Assessment of the survey due to their lack of subject-matter expertise in the area; leaving the discipline rating reflecting the views of a single person. A single person assigning low ratings is not definitive, but those results, accompanied by the abstentions of two members, point to a lack of knowledge of the Mass Surge capability plans among members of the agency responsible for coordination among agencies.

The finding — that the members of a discipline with high levels of responsibility within a capability assign higher scores to that capability than other disciplines — was also shown in the assessment of the Hazardous Materials/WMD Response and Decontamination capability. When broken down by discipline, the data showed the police disciplines assigned higher rating than the average rating of all disciplines for each measure. The fire discipline assigned a higher-than-average rating in ten of fourteen measures.

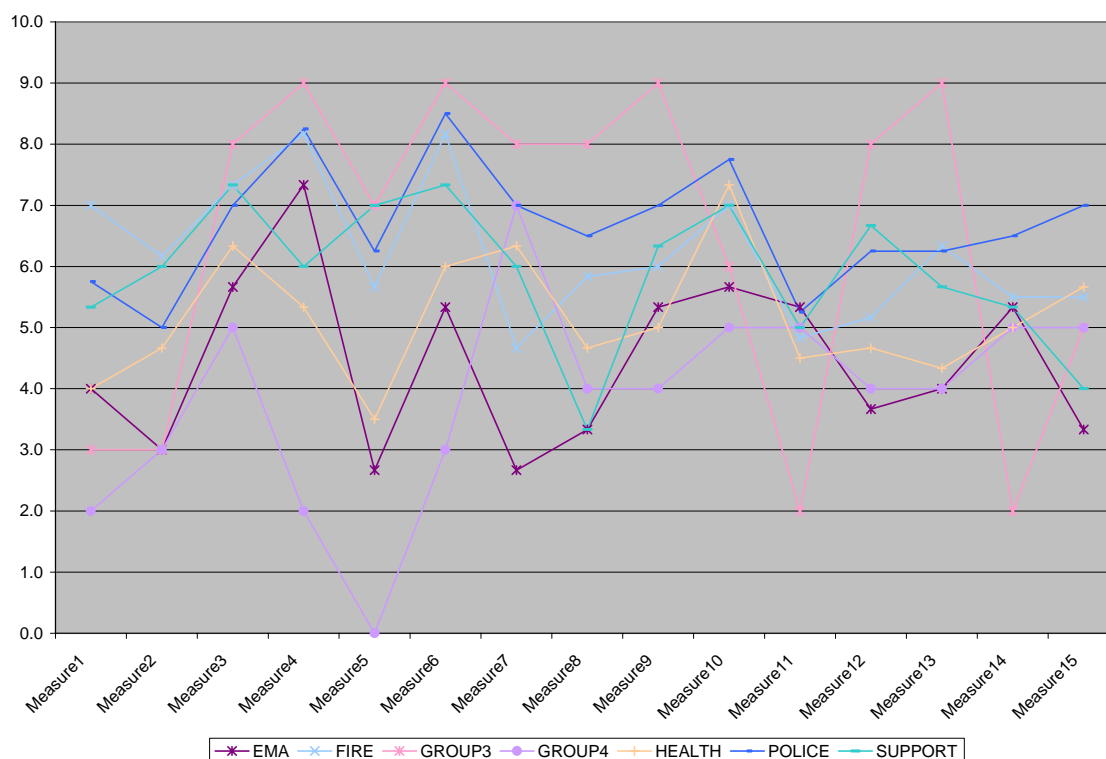


Figure 11. Hazardous Materials/WMD Assessment rating by discipline

Figure 11 reinforces a finding from the Mass Surge capability assessment. Emergency Management Agency had difficulty in assessing the Mass Surge capability; in the Hazardous Materials/WMD Response and Decontamination capability the data shows that the emergency management personnel routinely gave lower ratings than other disciplines. Figure 11 shows the measures in which the emergency management personnel assigned low ratings that exceeded the standard deviation for all assessors.

In regional response plans, the fire discipline is assigned responsibility for implementing plans and programs to improve the Hazardous Materials/WMD Response and Decontamination capability. The fire discipline was found to provide higher than average mean performance ratings. This should be expected, as the group is most familiar with the capability implementation plans. Unfortunately, this assumption may be incorrect. The committee that participated in the collaborative process also serves as

the committee with direct responsibility for implementing the Hazardous Materials/WMD Response and Decontamination capability. This committee provided assessment ratings that were opposite those of the fire discipline, in relation to the number of measures above or below average mean performance measure. This finding is the same finding as was discovered in the Mass Surge assessment when it was examined by discipline.

The finding — that the aggregate ratings of a group of individuals from a single discipline are different from the ratings resulting from a collaborative effort of similar individuals — is a significant finding. It may be a function of positive interaction and learning on the part of the collaborative group. This is the experience of the an assessment group in Minnesota who had subgroups complete the assessment survey, then come together as a group to discuss the subgroup results and reach a consensus rating. The description provided by members of this group was that the consensus effort was a learning experience and the changed scores reflected knowledge learned about capabilities in the consensus process.⁴⁶

If this description is the cause, then the knowledge of the experts selected to perform the assessment is called into question. If the knowledge about the capability assessed is advanced in the assessment process, then gained knowledge is a positive outcome and satisfies a goal of the assessment process. This finding is also indicative of a lack of knowledge and the results of such an assessment are of questionable use to develop strategic plans to close capability gaps.

The assessment disciplines and process groups' ratings indicate the potential for inconsistent results when using the assessment tool. This analysis has been peeling back the layers of the assessment to scrutinize the data. The data was first analyzed by the assessment process, which showed that groups may be able to identify a trend in capability status. The data at the discipline level began to show scoring bias based on discipline responsibility. The data at the discipline level also showed disagreement within disciplines about the status of capabilities.

⁴⁶ Natasha Beluch, "Meeting Notes, May 16, 2007." *Pilot Capabilities Assessment Project* (DHS: Washington, DC: May16, 2007), 2.

G. CONCLUSION

The analysis of the data suggests further exploration of the ability of the homeland security discipline to conduct a self assessment. If planning efforts at closing capability gaps are to be informed by the results of a self assessment, then the potential for errors in future planning efforts exists. Through observations and interviews with survey participants, a trend emerges as to why there are differing opinions on capability status. Discovery of this trend was found when looking for data on the benefits of the capability assessment process.

The following example suggests two problems. The first suggestion is that the subject-matter experts assembled to assess the capabilities did not have the expertise to conduct the assessment. The second suggestion is that the assessment process produced collaboration in an effort to solve a homeland security problem.

In this example, a senior emergency management planner agreed to participate in Assessment Group 1. Once the planner received the assessment, he did not feel comfortable providing answers to the Mass Surge assessment because of his lack of expertise in the subject. Instead of returning the survey incomplete, he passed it to an Urban Area Security Initiative Program Manager for the Health Emergency Support Function. This program manger did not feel comfortable performing the assessment and passed it on to the Council of Governments Medical Surge Hospitals and Health Subcommittee for completion during a conference call.⁴⁷ The subcommittee ultimately completed the survey by consensus and thus became Assessment Group 4 for the Mass Surge Capability assessment.

This example suggests a problem with the knowledge related to specific homeland security capability by a senior emergency management official. This lack of knowledge was further compounded when the official passed the assessment on to a program manager whom he mistakenly thought had the requisite knowledge to complete the assessment. The program manager also lacked the knowledge, but passed on the assessment to a group that she thought had the knowledge to complete the assessment.

⁴⁷ Email from Participant 8 to author, March 28, 2007.

If we could use the results of the completed assessment to show that this group reached a valid conclusion about the status of the measured capability, we could ultimately count the outcome of this example as a success, but the data suggests a broad diversity of opinions exists and that the assessment process has not demonstrated the ability to capture that diversity. As a result, that failure suggests an example in which a lack of knowledge, compounded at each level of responsibility, produced results that may be mistaken as valid.

On the positive side, this example demonstrated collaborative effort expanding from a single assessor to a group, in an attempt to develop an understanding of the capability. This type of collaboration is necessary to ensure a diversity of opinion and, once knowledgeable assessment group members are identified, will help ensure a valid result.

Did the different processes used affect the outcome? The evidence is not clear. Figures 10 and 11 exhibit the scoring by groups for the capabilities. The charts show the wide diversity of opinions on some measures and near agreement on others. These charts also suggest a trend in which the groups using the aggregated assessment process result in similar ratings (Groups 1 and 2) and the consensus groups provide either higher or lower ratings. This trending is interesting, but alone it does not seem to indicate a significant difference of opinion about the status of the capability.

V. CONCLUSION

The Unknown

As we know,
There are known knowns.
There are things we know we know.
We also know
There are known unknowns.
That is to say
We know there are some things
We do not know.
But there are also unknown unknowns,
The ones we don't know
We don't know.

—February 12, 2002, Department of Defense news briefing

Donald Rumsfeld⁴⁸

A. INTRODUCTION

This thesis explores the effect on outcomes when altering the process by which a specific assessment methodology is employed. The research question became: A DHS working group has proposed a methodology for performing capability assessments using local subject-matter experts. Can the portion of the assessment methodology designed to create collaborative opportunity be altered without affecting assessment outputs, while still creating the desired additional benefits of enabling and improving collaboration among homeland security professionals?

The small scale of the study limits how the results of the assessments can be interpreted. By themselves, the surveys mean little. When combined with the interviews of assessment team participants, however, potentially important insights into the understanding of capabilities at the local level are suggested. The findings and recommendations in this chapter discuss this issue in more detail.

⁴⁸ Hart Seely, “The Poetry of D. H. Rumsfeld,” *Slate*, April 2, 2003, <http://www.slate.com/id/2081042/>, accessed July 19, 2007

B. FINDINGS

This thesis set out to discover the level of effect that three different processes, used to conduct a self assessment, had on the data collected. The hypothesis was that the processes would not play a key role in the results, and that data collected from different processes would be comparable to the other. The thesis further hypothesized that the different processes would produce different levels of collaboration among the participants, and that one process would be identified as having provided more additional benefits than the others.

The results of the comparative case study differed from the hypothesis and suggest that the assumption that “self-assessment” is a reliable and valid methodology for performing homeland security capabilities assessment may be incorrect. Two points that support these findings. First, the experts — the “self” — are not sufficiently knowledgeable of the capabilities to perform the self assessment, and the process used in the assessment does not matter. In each of the three processes used in the comparative case study, groupthink reduction to the established mean appeared to be accepted. These findings suggest that strategy for the national assessment should be adjusted to fit the reality. If we assume we can do an assessment, and the assessment is faulty, what has changed in our assessment strategy since the last assessment? The answer is “nothing.” As a result, homeland security may be doing more harm than good by providing an illusion of preparedness. The illusion of preparedness — based on imprecise measurements — causes our community to make investments to close gaps that ultimately may not have existed. This becomes a missed opportunity that affects our national preparedness.

The data suggests that the homeland security community in the National Capitol Region includes very few people who can claim and demonstrate the knowledge necessary to assess the status of regional multi-discipline efforts to implement the *NPG*. If true, this finding is particularly surprising since many of the participants in the surveys are those responsible for such efforts. This lack of subject-matter expertise casts doubt on the ability of a self-assessment tool to capture an accurate snapshot of capability status.

There is reason to believe that this problem is national in scope. Preliminary results from a pilot test of the self-assessment process conducted in Minnesota found a similar problem in expertise of the assessment group. In Minnesota, over one-third of emergency managers in the state are new. These members felt they could use the assessment process to educate the emergency managers.⁴⁹ This evidence appears to support the finding that a lack of expertise exists to assess capabilities.

A related finding is that members of the homeland security community were willing to use the results from this tainted survey process even after they understood the problems with the data. Members felt they could develop future plans because they felt the tainted results were “about right and when viewed in comparison with other capability results gave an impression of status.”^{50, 51} This finding may be more important than the finding that the members lacked the knowledge to conduct the assessment; it shows they do not understand the importance of assessment. This finding indicates a need to develop a strategy for capability-based planning education to reinforce the foundation of our homeland security strategies.

Additional evidence, that the problem may be larger than the region, comes from a recent report issued by John Hopkins University. UASI homeland security professionals were surveyed about compliance with an understanding of HSPD 8. Recommendations to improve HSPD 8 compliance, based on data collected in the survey, called for enhanced regulation of homeland security grants and improved risk assessment, but notably failed to include recommendations pertaining to capability assessment.⁵² This omission represents the core of the assessment problem: The discipline is immature and its members need guidance and mentoring to institutionalize preparedness.

If a theme is suggested from the analysis, it can be best defined as a disconnection between the goal of a capability assessment process and the relationship of capabilities to

⁴⁹Lauren Fernandez email to author, Washington, DC, June 11, 2007.

⁵⁰ Interview of Participant 3 by author, Washington, DC, June 5, 2007.

⁵¹ Interview of Participant 5 by author, Washington, DC, June 6, 2007.

⁵² Amber Gisriel, William Grant, Brian Lee, Steve Fruchtmann, “HSPD-8 Compliance by UASI Jurisdictions (John Hopkins University May 2007), 43

local efforts. The inconsistent data on capability status produced by the surveys seems to indicate a lack of knowledge by local homeland security leaders. This finding is probably true; members of the assessment groups have been promoted within their organizations through civil service processes that infer a level of expertise within the traditional knowledge areas of their organizations. There is not a discipline within this regional community of homeland security capability officials and, as a result, no comparable level of hierarchical expertise can be inferred.

This thesis did not specifically examine what local officials understood about the capabilities-based planning requirements of HSPD 8 or whether they considered the TCL an appropriate building block for preparedness. Therefore, a lack of knowledge by local officials cannot be assumed. It may be safe to assume though, that if local leaders were placing the same priorities upon the capabilities being measured as does the Department of Homeland Security, it would follow that they would have a better understanding of those capabilities. It is possible that the findings of this comparative case study are the result of this disconnection in priorities.

The findings related to collaboration were not as hypothesized, and they support a possible theory that members of the homeland security community are focused on different issues than what is being measured in the capabilities. Each assessment process produced demonstrable collaborative efforts; members sought information about capability status from contacts they believed had the expertise to provide capability status information. This indicates that there is an established network in the homeland security community. This network would not exist without reason.

Assessment Group 1 provided an example of this collaboration using existing networks. The design of this group suggested that members work alone and complete the process with little or no collaborative effort. Instead, members of this group sought out other members to discuss capabilities before assigning a rating.⁵³ The group knew where to look for expertise and had the desire, relationships and authority to have others

⁵³ Interview of Participant 3 by author, Washington, DC, June 5, 2007.

perform the assessment. This is not necessarily an example of lack of knowledge, but an example of the confusion in the measurement process.

An example of the desire for collaboration of the assessment groups supported a need for collaboration. A majority of survey participants stated that the inclusion of a group process in the self-assessment tool provided the opportunity to discover unknown information about a capability and would improve their effort to develop solutions and priorities to close a capability gap. A hazardous materials response official found that the discussion allowed better understanding of other disciplines' needs to create capability to meet the demands of a measure.⁵⁴ A police official felt that the opportunity for collaboration was an opportunity to engage and educate support functions about their roles in creating a capability.⁵⁵

To summarize the results of this comparative case study, the most important suggestion is that local officials cannot use this assessment tool to provide the snapshot of capability status desired by the Department of Homeland Security. This is not necessarily because of faults in the assessment tool, but because of the knowledge base of the local officials. An examination of the results suggests an undercurrent of homeland security activities that the assessment tool does not capture: Local officials are focused on homeland security issues that are not the same as the assessment tool measures, and they lack an appreciation for the significance of assessment.

C. RECOMMENDATIONS

The comparative case study conducted in this thesis suggests insight into the limits of the capability-assessment process in the homeland security discipline. The findings suggest an understanding of the status of a capability was unlikely to be gained directly from this assessment methodology.

These results suggest a need to change strategy in our homeland security capabilities-assessment processes. Current assessment strategies are designed to

⁵⁴ Interview of Participant 13 by author, Washington, DC, June 8, 2007.

⁵⁵ Interview of Participant 14 by author, Washington, DC, June 5, 2007.

document organizational accomplishments, but do little to reveal the effect of those accomplishments. An example of an area that has an existing strategy that may be effective is in the fire service. The consensus standards issued by the National Fire Protection Association create a national model of minimum fire protection standards calibrated to community size and resources. Through minimum training standards, local fire chiefs and firefighters develop knowledge of these standards. Because the knowledge of the firefighting capability is standardized through an accepted consensus process, the standards have validity that the current assessment process lacks.

These standards create levels of understanding that are national in scope. For example, fire fighters with basic fire training anywhere in the country learn the same fire prevention strategies.⁵⁶ Fire officers around the country receive the same information about response times and safety standards.⁵⁷ This widespread knowledge is missing from the homeland security discipline. The language of the discipline has not yet been fully developed.

A new assessment strategy would place a higher priority on the *understanding* of homeland security capability than on the *assessment* of homeland security capabilities. The new strategy should focus on identifying what is working within homeland security. The needed changes require the development of concepts for asking the right questions, questions that will create knowledge of local priority-setting processes and planning efforts.

The results of these assessments could then be used to develop a national picture of local capabilities using a different matrix than the *NPG*. A new matrix would provide an overview of all preparedness efforts, not just the ones associated with HSPD 8. This is necessary because the federal direction about preparedness activities is conflicted.

Not all federal planning efforts align with the *NPG*. Specifically, HSPD 5 and the National Response Plan designate additional capabilities, planning assumptions or

⁵⁶ NFPA 1001, Standard for Fire Fighter Professional Qualifications, 2008 Edition, Annex A Explanatory Material, 6.5.2 (NFPA: Quincy, MA).

⁵⁷ NFPA 1021, Standard for Fire Officer Professional Qualifications, 2003 Edition, Chapter 7.6 Emergency Services Delivery and 7.7 Health and Safety (NFPA: Quincy, MA).

separate functions that create confusion when local authorities try to determine implementation priorities for capability-based planning efforts. This misalignment may help to explain why local officials have developed systems that are not captured in the capability assessment.

For example, HSPD 5 addresses two of the elements listed on the TCL: on-site and emergency operations center management. The HSPD 5 scenarios match only 5 of the 15 listed under the TCL or HSPD 8: hurricane, earthquake, hazardous materials and nuclear.⁵⁸ The National Response Plan designates responsibilities among federal agencies for federal response to significant events. The NRP designates 15 Emergency Support Functions to accomplish response tasks. “Four of the 15 ESF groupings do not align with the elements of the TCL: transportation, public works and engineering, energy and external affairs.”⁵⁹

To develop the necessary snapshot of capability status, a new assessment strategy will have to assess more than HSPD 8 and the TCL. The measurement must include all preparedness efforts that local authorities are trying to implement. These efforts will provide the needed data to determine capability status.

1. Leadership

This thesis has identified problems with the levels of homeland security knowledge and recommended improved education in capabilities-based planning for homeland security leaders. The thesis has also argued that the *NPG*, when used as a measuring stick for these professionals, may be the wrong measure.

This is similar to the situation Bratton faced when he took over the New York City Police Department. His commanders did not believe there were crime problems in the subway system because the statistics told them only 3 percent of the city’s major crimes took place in the subway. Bratton felt the commanders’ assessment of crime was

⁵⁸ Chris Bellavita, Complex Adaptive Lecture, July 17, 2007, quoting White House, Homeland Security Presidential Directive/HSPD 5 (Washington, DC: The White House, February 28, 2003), 22.

⁵⁹ Bellavita Lecture, July 17, 2007, quoting National Response Plan (Washington, DC: Department of Homeland Security, March 2004): 19.

incorrect. Bratton heard the complaints of citizens about conditions in the subways and dispatched his commanders to ride the subway. In a matter of weeks, police strategy changed to focus on reducing crime on the subways, because the police commanders recognized the problems with their previous assessments and adjusted their policing strategies accordingly.⁶⁰

By viewing the tested capabilities-assessment process as crime statistics in the subway system in this example, we can see that we are maintaining the status quo in regards to our knowledge. If we require our leadership to participate in an educational assessment process that focuses on understanding the existing capabilities and needs, we should be able to develop leadership momentum for changes to the methodologies we use to examine capabilities. Riding the subway was the educational assessment process for the police commanders.

The assessment process becomes the tipping point. Leaders who cannot show knowledge of their capabilities — and defend those capabilities as being appropriate to their local needs — should be replaced with leaders who can. The key to this tipping point is that it is tied to the leaders' understanding of their capabilities as related to local needs, not to the NPG.

2. New Assessment Tactics

The development of tactics for gaining an understanding of what local homeland security efforts are, and how they are developing, can be very simple and straightforward. A large, relatively untapped body of capability status evidence exists. This evidence is related to actual emergencies and all levels of response to the incident. There is also a large body of evidence related to exercises.

A new assessment tactic could be the comparison of actions related to a past incident to the same incident scenario today. The actual incident could be studied through after-

⁶⁰ W. Chan Kim and Renee Mauborgne, *Blue Ocean Strategy* (Boston, MA: Harvard University Press, 2005), 153.

action reports and interviews with key decision makers. The current scenario can be assessed through interviews at multiple levels within an organization. The result is to understand the effect of an investment.

For instance, the *Arlington County After Action Report on the 9/11 Pentagon Attack* can be used as a basis for examining an actual response. Asking the local police and fire officials, “What would be different if the attack were to occur today?” the discussion would continue until they gained an understanding of the effect of any added capabilities.

For example, would the dollars invested in urban search and rescue teams have saved any lives in the same scenario? If the answer is *no*, then the net effect of the investment is zero. If the answer is *yes*, then there is a gain from the investment. In either case, questions about why the urban search and rescue investment received funding and how the investment was implemented will provide useful data. This data will allow a broader examination of influences on the homeland security decisions of local governments.

To examine a capability that does not have an incident parallel, we can use exercise data. A comparative case study of exercises and response policies to radioactive dirty bombs may reveal that the baseline policy for a region on 9/11 would have consisted of rapid response by all disciplines to perform rescue, removal and decontamination of potentially exposed persons. A comparative case study of investments related to radiation response may show multiple programs to improve personal protection, detection and decontamination.

A comparative case study of recent exercises and current response policies may indicate that the effect of response policies remains the same as on 9/11: rapid response by all disciplines to perform rescue, removal and decontamination of potentially exposed persons. At first blush, it would seem that no gain has been accomplished through the investments because the effect of the response is the same before and after the investment.

Questioning of members in various disciplines should take place to identify other areas of benefit from the investments. Arguments can be made that the investments will result in rapid identification of a radiation dirty bomb incident and that this early notification will allow notification to hospitals, utilities and transportation disciplines to protect critical infrastructure. Early notification will cause responders to take specific actions that will improve their safety, and such increased detection capability creates opportunity for incident prevention.

These examinations create opportunities for tipping point leadership. The examination creates opportunity for self examination among leaders. For example, if a fire chief has invested heavily in Urban Search and Rescue and, through this process, sees that the investment did not affect the outcome of an incident, then the fire chief has an opportunity to change the way he will evaluate future investments. Having to defend the effect of investments in radiation-detection capabilities can cause the fire chief to develop a keener understanding of the complexities of a radiation response. This knowledge can change behavior and become a tipping point for a better understanding of homeland security investments. Through improved investing, the leader can make changes that increase preparedness. Leaders who continue to make investments that would not improve an outcome will soon find themselves and their organizations left behind in the funding processes.

3. Areas for Future Research

This thesis identified an area of strength within the capability assessment process. This strength is the desire and willingness of the homeland security community to use collaborative efforts to solve problems. The recommendation made in this thesis is to utilize areas of strength in homeland security and use those strengths as the basis for future efforts to learn about homeland security capabilities.

Continuing to create the academic field of homeland security is one of the keys to implementing an understanding of homeland security and establishing national standards and policies for homeland security. The tactic described to compare and contrast past and current capability requires expertise levels sufficient to develop an understanding of

the effects of changes in capabilities. This thesis has shown there are problems with current levels of expertise; overcoming this issue will be challenging.

Additionally, an improved understanding of effects-based planning related to homeland security is needed. The military is using effects-based planning for warfighting capabilities.⁶¹ These efforts should be examined for transferable knowledge to the homeland security discipline.

D. CONCLUSION

This thesis evolved because of a perception that the capability assessment requirements being heaped on local government were not adding value to homeland security efforts. The evolution of possible solutions to this problem sought to add value and make improvements to existing strategies in capabilities assessments. Ultimately a promising tool was developed and tested. The analysis of the testing suggests that the tool may not function as designed. This is not necessarily because the tool was ineffective, but because existing homeland security strategies have not focused on developing the understanding of local capabilities and needs necessary to assess those capabilities.

The Department of Homeland Security stands to gain from investment in understanding of total capability by local government through participation in this process. The migration of perspective — from national capability to a regional capability to local capability — is necessary to make substantial and lasting gains in homeland security preparedness. This perspective is what is missing from current efforts and we should focus on causing change for future efforts.

⁶¹ Paul Davis and Gail Zellman, *Effects Based Operations* (Santa Monica, CA: RAND, 2001), 1.

THIS PAGE INTENTIONALLY LEFT BLANK

BIBLIOGRAPHY

- Adler, Michael and Erio Zigilio. *Gazing into the Oracle: The Delphi Method and Its Application to Social Policy and Public Health*. London: Jessica Kingsley Publishers, 1995.
- Alwin, Duane F. "Information Transmission in the Survey Interview: Number of Response Categories and the Reliability of Attitude Measurement." *Sociological Methodology* 22. (1992): 83–118.
- Bailar, Barbara A. "Quality Issues in Measurement" *International Statistical Review / Revue Internationale de Statistique* 53, no. 2 (1985): 123–139.
- Bishop, George F. "Issue Involvement and Response Effects in Public Opinion Surveys" *The Public Opinion Quarterly* 54, no. 2 (1990): 209–218.
- Bowman Ann O' M and Richard C. Kearney. "Dimensions for State Government Capability" *The Western Political Quarterly* 41, no. 2 (1988): 341–362.
- Busch, Michael. "Using Likert Scales in L2 Research. A Research Comments." *TESOL Quarterly* 27, no. 4 (1993): 733–736.
- Bush, George. *Homeland Security Presidential Directive/HSPD-8*. Washington, DC: The White House, 2004.
- . "State and Local Preparedness for Terrorism: Selected Policy Issues" *Congressional Research Service Report For Congress*, RL31266. Washington, DC: CRS, 2002.
- Canada, Ben. "The Department of Homeland Security: State and Local Preparedness Issues" *Congressional Research Service Report For Congress*, RL31490. Washington, DC: CRS, 2002.
- Caudle, Sharon. *Homeland Security and Capabilities-Based Planning: Improving National Preparedness*. Monterey, CA: Naval Postgraduate School, 2005.
- Chafetez, Josh. "It's The Aggregation, Stupid!" *Yale Law and Policy Review* 23 (2005): 577–585.
- Chertof, Michael. *FY2006 Homeland Security Grant Program (HSGP) Award for the District of Columbia*, Washington, DC: Department of Homeland Security May 30, 2006.
- Cox III, Eli P. "The Optimal Number of Response Alternatives for a Scale: A Review." *Journal of Marketing Research* 17, no. 4 (1980): 407–422.

- Davis, Paul. *Analytic Architecture for Capability-based Planning, Mission System Analysis, and Transformation*. Santa Monica, CA: RAND, 2002.
- Davis, Paul and Gail Zellman. *Effects Based Operations*. Santa Monica, CA: RAND, 2001.
- Department of Homeland Security. *After Action Report, Pilot Capabilities Assessment – Pilot Site 1 (Florida)*. Washington, DC: Department of Homeland Security, 2006.
- . *State Homeland Security Program and Capability Review Guidebook, Volume 1*. Washington, DC: Department of Homeland Security, 2005.
- . *Target Capabilities List, and Version 2.0 (Draft)*. Washington, DC: Department of Homeland Security, 2005.
- . *Phase II Target Capability Development: Instructions and Worksheets*. Washington, D.C: Department of Homeland Security, 2006.
- Dunn, John T. *Modeling and Simulation for Readiness and Capability Assessment, Research Report*. Maxwell Airforce Base, AL: Air War College, 1997.
- Fallows, James. “Artificial Intelligentsia,” *The Atlantic* 298, no 3. (October 2006).
<http://www.theatlantic.com/doc/prem/200610/fallows-tech> (September 9, 2006).
- Gowen, Jeffery B. “Avoiding ‘Feel Good’ Civil-Military Operations.” *Special Warfare* 18, no. 3. Fort Bragg, NC: (2005): 9–12.
- Green, Melanie and Jon A. Krosnick. “Telephone versus Face-to-Face Interviewing of National Probability Samples with Long Questionnaires.” *Public Opinion Quarterly* 67, no. 1. (2003): 79–125.
- Green, Walter. “Thoughts of Benchmarking for Disaster Preparedness Assessment.” *The Electronic Journal of Disaster Science*, no. 2 (2003).
<http://www.richmond.edu/~wgreen/ejem0204.html>, accessed December 27, 2006.
- Groves, Robert M. “Research on Survey Quality Data.” *The Public Opinion Quarterly* 51, Part 2: Supplement: 50th Anniversary Issue (1987) S156–S172.
- Henke, Tracy. “Application Review and Scoring Approach for Fiscal Year (FY) 2006 Homeland Security Grant Program.” *G & T Information Bulletin*, no. 202. Washington, DC: Department of Homeland Security, Office of Grants and Training. (2006): Appendix A.
- Hocevar, Susan, Gail Thomas and Erik Jansen. “Building Collaborative Capacity: An Innovative Strategy for Homeland Security Preparedness.” *Innovation Through Collaboration, Advances in Interdisciplinary Studies of Work Teams* 12. Elseier Ltd: 2005.

- Kessel, Ronald T. "Grading smart sensors: Performance assessment and ranking using familiar scores like A+ to D-" *Intelligent Computing: Theory and Applications III, Proceedings of SPIE 5803*. Bellingham, WA: SPIE (2005): 120–130.
- Kettl, Donald. *Promoting State and Local Government Performance for Homeland Security*. Washington, DC: The Century Foundation, 2002.
- Kim, W. Chan and Renee Mauborgne. *Blue Ocean Strategy* (Boston, Massachusetts: Harvard University Press, 2005), 153.
- Kluger, Jeffrey. "Why We Worry About The Things We Shouldn't... ...And Ignore The Things We Should.' *Time*. December 4, 2006.
- Krosnick, Jon A. and Duane F. Alwin. "A Test of the Form-Resistant Correlation Hypothesis: Ratings, Rankings, and the Measurement of Values." *The Public Opinion Quarterly* 52, no. 4 (1988): 526–538.
- Labovitz, Sanford. "In Defense of Assigning Numbers to Ranks" *American Sociological Review*, 36, no. 3 (1971): 521–522.
- Lanier, Jaron. "Digital Maoism: The Hazards of the New Online Collectivism." *Edge* (May 2006).
- Larrick, Richard P. and Jack B. Soll. *Intuitions about Combining Options: Misappreciation of the Averaging Principle*. Durham, NC: Duke University, 2005.
- Lentz, R. T. "Strategic Capability: A Concept and Framework for Analysis." *The Academy of Management Review* 5, no. 2 (1980): 225–234.
- Levitt, Steven and Stephen Dubner. *Freakonomics*. New York: HarperCollins, 2005.
- Levy, Steven. "Poking a Stick into the 'Hive Mind.'" *Newsweek* CXLVIII, no. 8/9. New York (2006).
- Marcus-Roberts Helen M. and Fred S. Roberts. "Meaningless Statistic." *Journal of Educational Statistics* 12, no. 4 (1987): 383–394.
- Mason, Robert, John E. Carlson, and Roger Tourangeau. "Contrast Effects and Subtraction in Part-Whole Questions." *The Public Opinion Quarterly* 58, no. 4 (1994): 569–578.
- Mayer, Harry. *First Responder Readiness: A Systems Approach to Readiness Assessment Using Model Based Vulnerability Analysis Techniques*. Monterey, CA: Naval Postgraduate School. 2005.

- Mayer, Lawrence S. and I. J. Good. "On Ordinal Prediction Problems." *Social Forces* 52, no. 4 (1974): 543–549.
- Moskal, Barbara. *ED446110 2000-09-00 Scoring Rubrics Part I: What and When*. College Park, MD: Eric Digests, 2000.
- Pakulat, Harold. "Scale Modifications for the 2006 Stanford IT Services Survey." *Stanford Information Technology Service 2006 Client Survey*. Stanford, CA (2006): Appendix C.
- Pavlak, Alex. *Modern Tiger Teams: Team Problem-Solving for the 21st Century*. Severna Park, MD: Thales Research. 2000.
- Poister, Theodore and John Thomas. *The "Wisdom of Crowds": Learning from Administrators' Predictions of Citizen Perceptions*. Los Angeles, CA: Public Management Research Conference, 2005.
- Reese, Shawn. "Homeland Security Grants: Evolution of Program Guidance and Grant Allocation Methods." *Congressional Research Service Report for Congress*. Washington DC: CRS, 2006.
- Ridge, Tom. *The Office for Domestic Preparedness Guidelines for Homeland Security, Prevention and Deterrence*. Washington, DC: Department of Homeland Security, 2003.
- Rodgers, Gary. *U.S. Military Readiness: Taming the Dragon of Change*. Washington, DC: National Defense University, 1998.
- Saunders, David, Moya Tyndall and Tom Whitehouse. *The Role of System Modeling and Simulation in Royal Australian Navy Capability Management*. Melbourne, Australia: DSTO, 2000.
- Schwarz, Norbert, Barbel Knauper, Hans J. Hippler, Elisabeth Noelle-Neumann, and Leslie Clark. "Rating Scales: Numeric Values May Change the Meaning of Scale Labels." *The Public Opinion Quarterly* 55, no. 4 (1991): 570–582.
- Select Committee on Homeland Security House of Representatives. *Hearing On Response to Terrorism: How is the Department of Homeland Security Improving Our Capabilities?* Washington, DC: Government Printing Office, 2003.
- Sontag, Sherry and Christopher Drew. *Blind Man's Bluff*. New York: Public Affairs, 1998.
- Sunstein, Cass R. "Mobbed Up." *The New Republic Online*. June 24, 2004.
- Surowiecki, James. *The Wisdom of Crowds*. New York: Anchor Books, 2005.

- Thomas, Gail, Susan Hocevar and David Jansen. *A Diagnostic Approach to Building Collaborative Capacity in an Interagency Context*. Monterey, CA: Naval Postgraduate School, 2006.
- Thompson, Bennie, “Department of Homeland Security churns out poorly developed schemes,” *The Hill*. June 5, 2007, <http://thehill.com/leading-the-news/departments-of-homeland-security-churns-out-poorly-developed-schemes-2007-06-05.html> (accessed March 16, 2007) .
- Ulman, Harlan. “A Brown Water Revolution?” United States Naval Institute. *Proceedings* 132, no. 6. Annapolis, MD: 2006.
- United States Government Accountability Office. *Results-Oriented Government: Practices that Enhance and Sustain Collaboration Among Federal Agencies*. GAO-05-15. Washington, DC: 2005.
- . *High Risk Series and Update* GAO-05-207. . Washington, DC: 2005.
- Velleman, Paul F. and Leland Wilkinson. “Nominal, Ordinal, Interval, and Ratio Typologies Are Misleading.” *The American Statistician* 47, no. 1 (1993): 65–72.
- Welty, Gordon. “Problems of Selecting Experts for Delphi Exercises.” *The Academy of Management Journal* 15, no. 1 (1972): 121–124.
- Whitney, Justin D. *The Wisdom of Crowds as a Model for Trust and Security in Peer Groups*, Worchester, NY: Worchester Polytechnic Institute, 2005.
- Winter, Sidney G. “The Satisficing Principle in Capability Learning.” *Special Issue: The Evolution of Firm Capabilities, Strategic Management Journal* 21, no. 10/11 (2000): 981–986.
- Witt, James Lee. “Capability Assessment for Readiness.” *A Report to the United States Committee on Appropriations*. Washington, DC; FEMA, 1997.
- Woodbury, Glen. “Measuring Prevention.” *Homeland Security Affairs* I, no. 1 (Summer 2005): 1–11.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A: MEASURES – MASS SURGE CAPABILITY

Measure	Description
1	Our region's plans specify the criteria and process for activating Medical Surge procedures.
2	Our region's plans for Medical Surge are based on a formal assessment of risks and vulnerabilities.
3	Our region's plans address the use of existing facilities in support of Medical Surge (e.g., hospitals, clinics, extended care facilities).
4	Our region's plans address the identification and setting up of additional facilities (e.g., provision of personnel, equipment, pharmaceuticals).
5	Our region's plans address cultural characteristics of populations to be treated (e.g., religious needs, language barriers).
6	Our region's plans address the treatment requirements of special needs populations.
7	Our region's plans address patient and resource transportation (e.g., identification and availability of traditional and non-traditional resources).
8	Our region's plans address facility based evacuation (e.g., identification of receiving facilities, coordination of transportation assets).
9	Our region's plans address the treatment of Medical Surge response personnel, site staff, and their families (e.g., medical needs, stress management strategies).
10	Our region's plans address public information and communications requirements relevant to Medical Surge (e.g., dissemination of accurate, timely, accessible information to public, media, support agencies).
11	Nonprofit organizations/NGO's are actively engaged in your region's development of plans for Medical Surge (e.g., the American Red Cross, Salvation Army, faith-based organizations).
12	Our region's emergency transport and tracking systems are interoperable with national and Department of Defense systems.
13	Our region's supply inventories and reserves are adequate to support of Medical Surge.
14	Our region maintains databases that track the status of resources (e.g., medications, medical professionals) available to support Medical Surge.
15	Our region currently has (or has access to) the personnel it needs to support Medical Surge (e.g., medical service providers, patient transporters, security personnel).

16	Our region has a robust program for recruiting volunteers to support Medical Surge.
17	Our region has developed a method for managing spontaneous volunteers and donated resources in support of Medical Surge (That is, is there a system to intake volunteers, assign responsibilities and direct resources where they are most needed).
18	Our region currently has (or has access to) the equipment it needs to support Medical Surge (e.g., medical equipment, transportation vehicles).
19	Our region is able to ensure safety and security at the facilities it intends to use to support Medical Surge (That is, can your region determine and ensure the structural integrity, capability, and physical security of its Medical Surge facilities).
20	Our region is able to ensure the self-sufficiency of the facilities it intends to use to support Medical Surge (e.g., with respect to communications, power).
21	Our region has the information resources required to project the demand for Medical Surge (e.g., how many people will need treatment, how long it will take to secure facilities).
22	Our region has addressed the credentialing requirements of Medical Surge.
23	Our region have scalable patient tracking systems.
24	Our region has exercised its ability to implement Medical Surge (e.g., the provision of medication, follow-up care, securing of facilities).

APPENDIX B: MEASURES – HAZARDOUS MATERIALS / WMD RESPONSE AND DECONTAMINATION CAPABILITY

Measure	Description
1	Our region's plans specify the criteria for activating WMD/Hazardous Materials Response and Decontamination procedures.
2	Our region's plans for WMD/Hazardous Materials Response and Decontamination are based on a formal assessment of risks and vulnerabilities.
3	Our region's plans for WMD/Hazardous Materials Response and Decontamination address responder safety (e.g., accurate identification of hazards, appropriately certified responders, proper PPE).
4	Our region's public safety and HazMat personnel are trained at various levels (e.g., hazardous awareness, hazardous materials operations, hazmat technician, hazmat specialist, hazardous materials management).
5	Our region's HazMat personnel are equipped and trained for weather prediction and hazard plume modeling.
6	Our region's plans for WMD/Hazardous Materials Response and Decontamination address substance identification equipment (e.g., bases, vapors, liquids, solids, biologicals like white powder).
7	Our region's plans for WMD/Hazardous Materials Response and Decontamination address personnel needs (e.g., work/rest cycles, medical, psychological, financial assistance, etc).
8	Our region's plans address information sharing requirements relevant to WMD/Hazardous Materials Response and Decontamination (e.g., dissemination of accurate, timely, accessible information to public, media, support agencies, etc.).
9	Our region currently has (or has access to) the personnel it needs to support WMD/Hazardous Materials Response and Decontamination (e.g., safety officers, HazMat personnel, medical specialists).
10	Our region currently has (or has access to) the equipment it needs to support WMD/Hazardous Materials Response and Decontamination (e.g., PPE, medical equipment, WMD detectors).
11	Our region has information tracking systems relevant to WMD/Hazardous Materials Response and Decontamination (e.g., hot zones locations, real-time hazard databases, decontaminated persons updates).
12	Our region is able to ensure the safety and security at the scene and support facilities it intends to use for WMD/Hazardous Materials Response and Decontamination (That is, can your region determine and ensure the structural integrity, capability, and physical security of its HazMat Management facilities.).
13	Our region is able to ensure the self-sufficiency of its WMD/Hazardous Materials Response and Decontamination operations (e.g., with respect to communications, power).
14	Our region's plans address the demobilization of WMD/Hazardous Materials Response and Decontamination (e.g., debrief personnel, repackaging equipment).
15	To what extent has your region exercised its ability to implement WMD/Hazardous Materials Response and Decontamination procedures (e.g., exercised response to pre-identified hazards, decontaminated victims).

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Fire Chief Dennis Rubin
District of Columbia Fire and Emergency Medical Services
Washington, District of Columbia
4. Fire Chief Nicholas Finamore
Allentown Road Volunteer Fire Department
Fort Washington, Maryland
5. Chief Cathy Lanier
Metropolitan Police Department
Washington, District of Columbia